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EDUCATION OF SEVERELY AND PROFOUNDLY HANDICAPPED CHILDREN & YOUTH

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in cooperation with the U.S. Office of Education, Bureau of Education for the Handicapped

INTRODUCTION

The Northeast Learning Resource System (NELRS), Region 9, is part of a national network of thirteen centers funded by the United States Office of Education, Bureau of Education for the Handicapped under Public Law 91-230.

The NELRS is comprised of two centers, the Northeast Area Learning Resource Center (NEALRC) and the Northeast Regional Resource Center (NERRC) both of which are administered by the Branch of Special Education and Pupil Personnel Services, New Jersey State Department of Education. Working in conjunction with the State Departments of Education, the NELRS serves the following states: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, Rhode Island and Vermont. In order to support the communication and coordination of activities for both projects, a State Resource Consultant (SRC) serves in each state as a direct liaison to the NELRS.

The major goal of the NELRS is to support and further develop each states' capacity to provide educational services to handicapped children. The NEALRC is concerned with developing services related to media and materials and the NERRC is involved in developing and/or implementing exemplary appraisal and programming practices.

To advise and recommend activities to the NELRS, an advisory board was created whose membership includes the State Directors of Special Education from each client state or their designee. At their meeting in April, 1976, the NELRS Advisory Board identified the education of severely handicapped children as a regional concern and recommended that a regional conference be held.

Responding to this request, the NERRC conducted a needs assessment in the region. State and local level personnel throughout the Northeast involved in the education of severely handicapped children and youth were contacted to ascertain the primary needs of each state in providing services to this population. From this information, a list of regional priorities was developed that reflected the states' common interests. This information then served as the basis for determining the form and content of a regional conference for educators of severely and profoundly handicapped children and youth held on November 15, 16 and 17, 1976, at the Sheraton Inn in South Portland, Maine.

The overall goal of the conference was to disseminate information as it pertains to the education of severely and profoundly handicapped children and youth.

The specific objectives of the conference were:

1. To sensitize people to the ultimate potential and functioning of severely/profoundly handicapped people through the least restrictive educational environment.

2. To present an overview of national legislation and its implications for the northeastern region.

3. To identify selected exemplary services which are effectively illustrating the implementation of the legislation.

4. To disseminate information on selected practices and techniques in educational appraisal and programming for severely and profoundly handicapped persons.

5. To provide access to selected films and media/material resources.

6. To establish state teams who will facilitate the planning and implementation of follow-up activities within individual states in Region 9.

7. To disseminate information within the Region as well as the Learning Resource System network via the development of a monograph of the proceedings.

In order to attain conference goals and objectives the NERRC recommended that participants attend the conference as a state team which could be composed of members representing various backgrounds and areas of expertise. States were asked to select their participants from among the following groups: State Education Agencies, Local Education Agencies, Institutions and Agencies, Higher Education, Learning Resource Centers, Medical Professionals (e.g. physicians, physical therapists, occupational therapists) and parent associations or other advocacy groups. State Resource Consultants were asked to attend as the chairperson of their respective teams or to designate a person to act as chairperson.

Each state team was seen as a nuclear group responsible for disseminating information, planning and implementing follow-up activities according to the needs of each client state. Since the conference and follow-up activities would require a great deal of time and commitment, it was necessary that participants have a complete understanding of the conference objectives and their respective roles.

The intent of this document is to provide a summary of the proceedings from the November Conference. The document does not contain papers from all workshop sessions. Because of short timelines for editing and printing, not all presenters were able to contribute. We wish to acknowledge and thank all consultants who were able, despite their own commitments, to submit papers for this document. It is hoped that the information herein will be useful to those who are providing services to severely and profoundly handicapped children and youth.

WELCOME ADDRESS

CONFERENCE ON THE EDUCATION OF SEVERELY AND PROFOUNDLY HANDICAPPED PEOPLE

John Kierstead
Director of Special Education
Maine State Department of Education
Augusta, Maine

On behalf of the Commissioner of the Department of Educational and Cultural Services, H. Sawin Millett, myself and members of the Division of Special Education, I would like to welcome you to this conference on the Education of Severely and Profoundly Handicapped People.

I would like to also extend a special welcome and gesture of appreciation to the Northeast Learning Resource System, Nick Maldari, Bill Cashman and Sue Exting for the work they have done with the Division of Special Education and members of the Maine Special Education Community in assisting us in implementing comprehensive state and federal legislation for exceptional children. An additional thanks should go to the Northeast Regional Resource Center for bringing this conference to us.

Its a pleasure to have with us also the people from the national office to share the national picture in providing education for the severely and profoundly handicapped; to share with us also the latest revision in the proposed regulations for 94-142 the Education of All Handicapped Act but more importantly to have them here to witness the many fine educational programs that are benefiting the severely and profoundly handicapped nationwide.

Its also a pleasure to welcome the program participants for they are the pioneers that will ultimately solidify the service delivery system for a population too long forgotten.

The task before us today is an exciting one. Exciting for me in that key people with key responsibilities are addressing a common goal, education for an educationally neglected population, a goal that is shared by many and not unique to special educators. People in the fields of medicine, mental health corrections, retardation, and human services are equally concerned with this goal. More importantly, however, parents share this goal and are anxious for they have waited a long time.

The Education of All Handicapped Act and the Secretary of Health, Education, and Welfare's Interdepartmental Committee on Deinstitutionalization have now paved the way for a succession of strategically planned activities to give to this population what is rightfully theirs. The impact may not be immediate but will evolve over time through intensive efforts of people like yourselves.

Today, we will hear many issues discussed. Some of these issues will have resolves but others will not. However, these issues should challenge all of us.

With the Individual Educational Plan (I.E.P.) component of 94-142 and Maine's Special Education Legislation, we are challenged to develop valid instructional goals for individuals who for centuries have been foreign to the Educational Community, whose individual needs include self-help skills or socialization, not traditional terminology for most educators. We are challenged to choose the instructional setting that is optimal for these individual goals to be reached. We must ask ourselves, are the conditions necessary for learning more statisfactorily achieved in a public school setting, in a home or residential center or activity center?

Just as much of a challenge is the means by which we determine acceptable progress and development for this population. The traditional tools of the trade will not reveal the growth that in many cases takes months or years.

The Bureau of Education for the Handicapped has committed its resources to those individuals now unserved; it's committed equally its resources to the training needs of personnel who will be expected to carry out that Individualized Educational Plan. However, there are many unknowns that ultimately will prove themselves over time, but for now creates challenges for all of us. Will the traditional special education teacher training models prove adequate or will they have to be revised? Can we even rely on a teacher training model to do the job with this population or do we need a therapist training model? Will trained aides be more effective than volunteers. Can we rely on an optimal student - teacher ratio for the severely and profound handicapped individuals or should that relationship be left to the direct service providers?

These issues are not easily addressed. Look around the country, the variation on this theme is astounding. But let's not be overwhelmed by all this variation for we have a challenge to now look at each individual's need and address it accordingly.

You people here today are making that effort much easier through your work. Since these individuals will require a total support system throughout much of their lives it is unlikely that their educational needs will be addressed in a single fashion. Psychiatric therapy, Nursing and Medical Services, Transportation, Recreation and leisure time, Foster homes, Guardianship and the list of necessary services goes on. Inter-agency and inter-group efforts must materialize if a coordinated community, school, and family service delivery system is

to be designed, that will guarantee that no severely and profoundly handicapped individual is without the necessary medical, educational, and social support. We all have a responsibility to work toward this end but more importantly, a necessary component of that system (education) rests squarely on our shoulders.

BASIC COMPONENTS OF INSTRUCTIONAL PROGRAMS

THEORY INTO PRACTICE
1975, 14(2), pp. 123-136

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Severely handicapped students (Sontag, Burke, & York, 1973) are often different from many "normal" and "mildly handicapped" students on a variety of relevant instructional dimensions (e.g., generalization, retention, imitation, articulation, acquisition, vision skills). Due to such differences the premise offered is that the teacher of these students must systematically delineate, compensate for the absence of, or directly teach skills that teachers of less handicapped students may assume are operative.

For the past several years the writers and their colleagues have been attempting to formulate and implement developmentally tenable and empirically verifiable educational services for severely handicapped students in the Madison, WI, Metropolitan School System. One of the vehicles determined of substantial educational value from both training and service perspectives is the organization of circumscribed teacher-pupil interactions into instructional programs. The term instructional program, as it is used here, refers to basic factors, variables, etc., that a teacher of severely handicapped students must consider, systematize, and/or implement in order to teach a particular skill.

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[1] The development and dissemination of this paper was supported in part by Madison Metropolitan School District Federal Contract No. OEG-0-74-7993, and in part by Grant No. OEG-0-73-6137 to the University of Wisconsin-Madison from the Department of HEW, Bureau for Education of the Handicapped, Division of Personnel Preparation, Washington, D.C. 20202.

[2] This paper has been republished as follows:
Republished: L. Brown, T. Crowner, W. Williams, & R. York (Eds.) Madison's alternative for zero exclusion: A book of readings. Vol. V. Madison, WI: Madison Public Schools, 1975. Pp. 8-28.
Republished: Educating the 24-Hour Retarded Child. Arlington, TX: National Association for Retarded Citizens, 1975. Pp. 164-187.
Republished: R. Anderson and J. Greer (Eds.) Educating the severely and profoundly retarded, 1976, pp. 55-74

Brown and York (1974) delineated a four component model of an instructional program: What to teach (content); how to teach (method); how does one assess whether or not one has taught (measurement); and the instructional materials required.

Using the four component model of an instructional program delineated above, severely handicapped students have been taught many developmentally important, practically useful, yet circumscribed skills (Brown, Bellamy, & Sontag, 1971; Brown & Sontag, 1972; Brown, Scheuerman, Cartwright & York, 1973; Brown, Williams, & Crowner, 1974). However, as should be obvious, adherence to the four component model may be necessary, but is not sufficient to provide the best possible instructional services in that several crucial factors related to the acquisition and performance of specific skills are not taken into account. Thus, the four component instructional program has been expanded substantially and is presented below:

Basic Components of an Instructional Program

I. What skill does a teacher intend for the student to perform (What does a teacher intend to teach the student)?

II. Why does a teacher want the student to perform a specific skill?
III. How does a teacher intend to teach the student to perform a skill?
IV. How can a teacher empirically verify that the skill of concern is being or has been taught?
V. Can the student perform the skill at a situationally acceptable rate?
VI. What does a teacher intend to use as vehicles (instructional materials) for the skill to be acquired and performed?
VII. Can the student perform the skill across:
  a. Persons;
  b. Places;
  c. Instructional materials;
  d. Language cues?
VIII. Can the student perform a skill without directions to do so from persons in authority?

Before proceeding to a more detailed presentation of each component, several points should be noted and emphasized. First, space does not permit as detailed a presentation of each component as is possible. Second, there is no doubt that the list of components delineated above is incomplete and that additional components will evolve. Third, we are recommending that a teacher of severely handicapped students empirically verify the acceptable status of his/her students on dimensions of at least the components delineated above.

In the narrative that follows, an attempt will be made to elucidate the basic qualities of each component, justify their inclusion, show how they might be realized, and provide teachers with practical suggestions as to how the requisite skills inherent in each might be incorporated into instructional activities.

I. What skill does a teacher intend for the student to perform?

One of the more crucial differences between teaching normal or mildly handicapped students and severely handicapped students is the degree of precision required when presenting instructional content (Brown & York, 1974). Teachers of severely handicapped students must be afforded the experiences and skills necessary to systematically disect, sequence, redisect resequence, etc., skills under instruction. In our judgment, the conceptual and problem attack skills required and fostered by a task analysis orientation are ideally suited for teachers of severely handicapped students.

A teacher may be interested in teaching a value, an appreciation, an attitude, a skill, a concept, an understanding, a subtlety, or a feeling. Certainly, such initially nebulous objectives can be taught to severely handicapped students. However, the position offered here is that such objectives probably can be realized more efficiently if they can be operationalized in such a manner as to clearly indicate to the teacher and to the student precisely what is requested and when it should be manifested. It is a rare severely handicapped student indeed who can make large leaps through poorly organized and unspecific curriculum content. On the other hand it has been our experience that all students can acquire new skills if those skills are disected and sequenced precisely.

Task analysis essentially requires the precise delineation of skills within a particular curriculum area, the division of those skills into component parts, and the sequencing of those skills from easy to hard (simple to complex). According to Resnick, Wang and Kaplan (1974) task analysis involves:

> the develop(ment of) hierarchies of learning objectives such that mastery of objectives lower in the hierarchy (simpler tasks) facilitates learning of higher objectives (more complex tasks)... This involves a process of task analysis in which specific behavioral components are identified and prerequisites for each of these determined (p. 680).

Perhaps the major purpose of analyzing skills inherent in a curriculum content area is to delineate an organized and precisely stated constellation of verifiable objectives from which a variety of instructional activities can be generated. A task analysis is not a statement of how a skill is to be taught but rather a statement of what is to be taught. A precise delineation of what is to be taught is an obvious prerequisite to the determination of the required materials, teaching procedures, measurement procedures, etc.

Notions as to what skills should be included in a particular content area and how such skills might be analyzed and sequenced can be obtained or abstracted from at least the following:

a. general child development literature,
b. general cognitive development literature,
c. general special education literature,
d. commercially available curriculum packages,
e. logical post-school performance demands.

It has been our experience that teachers of severely handicapped students can rarely use, without substantial adaptation, commercially available instructional content. Thus, from a training perspective, perhaps it is more appropriate to provide a teacher with skills and experiences in the area of task analysis so that in subsequent practical situations that teacher can adapt other or create new analyses to fit the developmental functioning level of his/her students.

There are at least three major reasons why teachers of severely handicapped students should be skilled in the use of basic principles of task analysis. First, a task analysis delineates starting points and terminal objectives and enhances the possibility that essential component skills will not be neglected. Second, utilization of task analysis procedures facilitates instruction that is tailored to individual functioning levels. For example, within the task analysis model mastery of various objectives can be assessed before instruction and students may only be instructed on objectives on which they failed to reach and for which they have mastered the prerequisites. In addition, students can be permitted to proceed through the sequence at their own pace, taking longer on trouble spots and skipping objectives on which they demonstrate mastery. Third, the utilization of task analysis procedures facilitates the development of more effective and efficient classroom programming. That is, a teacher can obtain data from students concerning the order in which skills are most readily acquired and skills that must be broken into smaller subskills in order to facilitate acquisition. This information can be used to continually improve instructional programs.

II. Why does a teacher want the student to perform a specific skill?

Generally, longitudinal educational objectives for severely handicapped students should be no different than those for other students. Public schools should prepare severely handicapped students to function as independently as possible socially, vocationally, and personally in the least restricting post school environment. In our view, there is no justification for preparing students to function in large residential institutions or to foster or maintain the development of environments that unduly shelter, restrict, or retard.

Perhaps due to the limited educational opportunities in the past and the almost inevitable placement of severely handicapped citizens in large residential institutions, it might have been acceptable to teach them to "walk in line," "make pot holders," "watch Jack LaLane" without much concern for why such skills were taught. Now, however, severely handicapped students will be enrolled in public school programs for as long as 21 years. Longitudinal public education coupled with the goals of the

deinstitutionalization and child advocacy movements force us to ask and justify why we should teach any specific skill. It is our current view that instruction of a skill should be justified primarily as a cumulative segment of a developmentally sound longitudinal curriculum sequence which is designed to insure independent functioning.

Well defined skill sequences across curricula domains (e.g., math, reading, language, play, self-help, independent community functioning) may be utilized to precisely delineate functioning levels within each domain. Placement of an individual along dimensions within skill sequences provides the teacher with vital information concerning the skills the individual has mastered, those that remain untaught, and in what order they might be presented. In addition, utilization of developmental skill sequences might minimize the potentially deleterious effects of changes in teachers and administrators on longitudinal programming. Obviously, a precise delineation of the current functioning level of a student on a variety of educationally important dimensions is more relevant to the development of viable instructional services than the use of such descriptions autistic, severely retarded, trainable, psychotic, emotionally disturbed, and low MA.

Finally, while the provision of longitudinal developmental services is a goal to which we all must strive, we have an extremely long way to go before realization. There are persons around the country who have developed relatively good preschool or postschool programs, others have developed reasonable public school age programs, others have developed notable parent training activities, others have potentially valuable research projects in operation, etc. To our knowledge there is no place in which all the needed longitudinal service components are operating to such an extent that the development of large numbers of citizens over long periods of time is maximized. Certainly, we still need to develop isolated bits of information, certainly extraordinary case study achievements will continue to be inspirational; but these and other such delimited endeavors rarely provide substantial changes in the life styles of many severely handicapped citizens.

III. How does a teacher intend to teach the student to perform a skill?

There is no doubt that teachers can formulate logically defensible longitudinal curriculum sequences and ingenious clusters of apparently relevant task analyses. However, if a teacher cannot teach students to perform the skills required by the sequences and analyses, then all is for naught. The procedures, techniques, tactics, strategies, etc. teachers use to reach new skills may be referred to as the how of instruction. Without a technology of how; what to teach is rhetoric.

Arriving at an empirically tenable system of how to teach new skills to severely handicapped students is one of the most crucial challenges confronting the educator. Particularly since delineating an appropriate how to teach is almost always confounded with varying degrees of visual, auditory, motor, attending, etc. impairments.

Precise and replicable statements as to how to teach new skills are unfortunately quite rare. What may be an effective procedure for teaching one student or one group of students may be inappropriate for another student or group. In addition, even such apparently precise techniques as those generated from the operant conditioning laboratories under the rubric of behavior modification and discrimination training are probably arts (Bricker, 1970).

Statements as to how to teach severely handicapped students have emanated from and will continue to emanate from many sources: electrical and mechanical engineering, human development, special education, psychology, teacher and parent ingenuity, the history of education, what grandmothers once did to name but a few. In an attempt to be eclectic and practical and still be relevant to the problems of severely handicapped students, we have organized information from a variety of sources into what may be referred to as basic principles of acquisition and performance. Many of the terms used to describe these principles have been taken from literature related to operant and respondent conditioning, discrimination learning, concept development and imitation learning. However, it should be emphasized that these principles, techniques, tactics, etc. must be adapted or converted for classroom use; that many schools of thought describe the same event with different words; and that the principles available for systematic utilization now are not sufficient for the educational community to provide the best possible services.[3]

IV. How can a teacher empirically verify that the skill of concern is being, or has been, taught?

Some teachers do not even attempt to systematically assess any aspect of student progress; some teachers attempt to record every response every student makes every minute the students are in school; some teachers use one particular measurement system to the exclusion of all others. The position offered here is that teachers should have the skills necessary to implement a variety of measurement designs and techniques in such a manner as to foster a smoothly flowing instructional environment, yet in a manner that also allows the systematic recording and empirical verification of crucial aspects of student development.

There can be little doubt that direct measurement of the developmental progress of severely handicapped students is a vital aspect of any instructional system. Perhaps the following two passages are appropriate here:

> In any empirical definition of teaching, instructional measurement is crucial. With normal and mildly handicapped students, inferences about populations of skills made from samples and inferences about generalization of skills across persons and places and materials are probably necessary and tenable. Unfortunately, inferential measurement, in our judgment, is an extremely questionable measurement

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[3] A more detailed listing of basic principles of acquisition and performance and appropriate references are available upon request.

> orientation when applied to most severely handicapped students. The general rule that we try to follow may be stated as follows: If you determine that a particular response, skill, concept, etc., is important to the development of the student, then it is incumbent upon the teacher to directly measure the existence of the response, skill, concept, etc. of concern (Brown and York, 1974, p. 9).

> Direct measurement is particularly crucial in attempts to teach cumulative tasks. If the correct performance of the responses in component c of a task are dependent upon the correct performance of the responses in components a and b, then the teacher must guarantee that a and b responses are in the behavioral repertoire of the student before she even considers progression to component c. Since most developmental skills are in many ways cumulative (mathematics, reading, language, speech, practical arts), teachers of trainable-level retarded students must be prepared to spend relatively long periods of time and considerable effort developing basic behavioral repertoires (Brown, 1973, p. 110-111).

It should be noted and emphasized that in addition to competencies related to how to empirically verify (measure) student progress, teachers should also be exposed to rationales regarding why and when to measure and to a variety of approaches toward measurement.

The following is a selected listing of measurement issues, terms, designs, assumptions, tactics, etc. to which our teachers in training are exposed. It should be noted that most of the designs listed below are what may be referred to as "subjects as their own controls designs." However, in addition to the listings below, teachers in training, as part of their general preparation, also receive information regarding parametric and nonparametric statistical manipulations, intergroup designs, standardized tests, etc.[4]

Basic Principles of Instructional Measurement

1. Subjective - Objective
2. Dependent Variable
3. Independent Variable
4. Intra-group Measurement Designs
5. Inter-group Measurement Designs
6. Correlated Designs (AB Design)
7. ABAB Designs
8. Test-Teach-Test Designs
9. Multiple Baseline Designs
10. Trials to Criterion Designs
11. Direct Measurement
12. Inferential Statistics
13. Cumulative Review Designs
14. Reliability
15. Correlation
16. Criterion Referenced Tests
17. Rate of Response
18. Intensity of Response
19. Frequency of a Response
20. Latency of a Response
21. Duration of a Response
22. Errors to Criterion

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[4] A more complete listing and appropriate references are available upon request.

23. Population	26. Sample
24. Continuous Measurement	27. Statistic
25. Parameter	28. Probe Designs

V. Can the student perform a skill at a situationally acceptable rate?

Rate is a term which typically refers to the number of times a particular response occurs in a given time period. In an academic setting where often times a skill is a composite of different responses, the view of rate can be extended to include the number of times all critical components of a skill are performed in a given time period. There is no doubt that severely handicapped students have deficiencies in the rates at which they perform particular responses or clusters of responses. There are times when severely handicapped students manifest rates of responding that are too high. For example, a normal student might hit himself in the head once a week, a severely handicapped student might hit himself in the head five times per minute for months. A somewhat similar but different rate deficiency also manifested is the inordinate amount of time many students require to progress through a series of cumulative responses. If students have acquired a skill and performed it correctly a specified number of times, it does not necessarily indicate that the skill is mastered. In order for a skill to be considered mastered, that skill should be performed correctly at a relevant rate criterion (proficiency).

There are at least three reasons for including rate of correct responding as a component of skill mastery. First, if students are to compete with and be tolerated by other individuals in the community, they will have to perform skills at community acceptable rates. For example, assume that a student has been taught to make change and then the student is asked to go to a grocery store and purchase the items on a grocery list. In a situation that actually occurred, one of our students secured the items on the list, computed the total cost of the items, and then counted out the appropriate amount of money required to pay for the goods. Unfortunately, the counting of the money required almost five minutes. Thus, a situation can exist where a student could accurately perform a given series of responses, but the time required for the performance may not be acceptable in a community setting.

Second, if a skill requires the utilization of a number of responses in sequence, a slow rate of responding may interfere with the performance of all components in the sequence by increasing the probability that the student may be unable to recall certain components. For example, assume a teacher gives a student a three component direction to follow. If the student takes twenty minutes to perform the first response, there is a good chance that she/he may not remember the cues for the last two responses.

Third, if one accepts the premise that a skill should be not only performed correctly, but performed at an acceptable rate criterion, then a question remains regarding when a rate criterion should be imposed upon skills that are cumulative. Because of a paucity of research in the application of a rate criterion in educational settings, a teacher faced with

this question seems to have two major options. Assuming skills A, B and C are cumulative, a teacher may choose to require the student to: perform A at a proficient rate before moving on to B; next perform both A and B (i.e., in combination) at a proficient rate before moving on to C; and finally, perform A, B and C at a proficient rate before terminating instruction. A second option would be to require the student to perform A, B and C correctly. Once acquired, a rate criterion would be imposed upon the combined skill (A, B and C) in order to achieve an acceptable level of proficiency.

VI. What Does the Teacher Intend to Use as Vehicles for the Skill to be Acquired and Performed?

Tasks and task materials are vehicles through which skills are taught. Obviously, choosing tasks and task materials should not be a hastily made arbitrary decision. Teachers should carefully design and/or choose tasks and materials that reflect a consideration of the unique problems presented by the students of concern. Since one of the primary goals of teaching severely handicapped students is to verify that skills acquired in controlled instructional settings will be performed in other more practical environmental settings, many tasks should be chosen for their functional use across environments.

Functional tasks can serve the dual purpose of providing concrete examples of abstract concepts which may increase meaningfulness (Zeaman, 1973) and of teaching practical skills that students may be able to utilize daily across many environments. For example, one-to-one correspondence skills (aligning members of two sets in an arrangement which manifests a one-to-one relationship between the members) may be taught through the aligning of blocks and bears, putting straws in cups, giving each classmate a cookie, or giving each place setting a cup, plate, spoon and fork when preparing for lunch. The latter two examples teach the skill while stressing function in applied settings; the former two simply require performance of the skill. The meaningfulness and utility that functional tasks can add to the acquisition of a skill argue strongly for their use when designing instructional programs.

Not all skills can be taught exclusively through functional tasks and materials. The types of tasks needed to teach many visual discriminations to severely handicapped students highlight this point. When teaching a visual discrimination skill the task chosen should make the essential stimulus characteristics (e.g., form, color, size) easy to discern. Although this point appears simple to apply, it has ramifications which, if not considered when structuring tasks, unfortunately may lead to the development of differential responding to nonessential stimulus characteristics. For example, assume a teacher wants to teach a student to discriminate the letter "A" from the letter "B". In an attempt to make the differences between the two letters easy to discern, the teacher presents a red uppercase "A" and a blue uppercase "B". In this situation the teacher may find that the student has learned that red is called "A" and blue is called "B".

A fundamental discrimination learning rule related to selecting tasks

with which to teach concepts is to choose tasks which will insure that responding is controlled only by the essential characteristics of the concept. In the letter recognition discrimination task mentioned above, this rule requires that the task should be designed so that responding is controlled by the form of the letters, not by color, size, texture or spatial position, etc. When using a functional task, control over nonessential or irrelevant characteristics is often difficult to achieve. For example, if one of the tasks used to teach letter discrimination is labelling the letters in the words "men" and "women" as they appear on the doors of public restrooms, a multiplicity of scripts, colors and placements would probably be encountered which might impede acquisition of the skill. In such situations, nonfunctional tasks which make the essential stimulus characteristics easy to discern and concommitantly reduce nonessential stimulus characteristics should probably be employed initially. Once the skill is acquired, however, essential and nonessential stimulus dimensions could then be varied or introduced.

When relating to this issue Becker, Engelmann and Thomas (1971) suggest that to insure that essential stimulus characteristics control responding, instructional tasks should be chosen which allow the teacher to:

1. teach a concept through a set of instances and not instances of the concept (e.g., examples of the letter "A" and examples that are not of the letter "A"),

2. construct instances of a concept such that they all have essential concept characteristics, and construct not instances having none or only some of the essential characteristics,

3. frequently vary nonessential characteristics of instances and not instances to insure that responding is only to essential characteristics (e.g., when teaching the letter "A", the size, color, texture and position of instances and not instances of the letter should be varied).

Implicit in the above three suggestions is the assumption that students are attending to variations in essential and nonessential characteristics of the stimuli presented. Often it is not enough to simply expect that consistent manipulation of the stimuli will be both necessary and sufficient conditions to produce the differential responses of concern. In some instances having students verbally label stimulus dimensions (nonverbal students might use gestures) and stimulus choices may facilitate differential responding to essential stimulus characteristics, and also increase retention of correct responses through the development of mediators (Butterfield, Wambold, & Belmont, 1973; Borkowski & Wanschura, 1974; Bricker, 1972; Jeffrey, 1953; Jeffrey, 1958; Chatelanat, Henderson, Robinson, & Bricker, 1971; Zeaman, 1973; Zimmerman & Rosenthal, 1974).

Other situations in which a teacher might choose to supplement functional with nonfunctional tasks might be those that require repeated

practice for the acquisition of a skill, since many functional tasks typically permit only one or two response opportunities for only a few students per day. It is probably not efficient though to simply employ a task because it permits repeated practice of a particular skill in that boredom and inattention which can compete with academic progress are many times end products of stereotypic repetition.

Whether a task is functional or not, teachers should attempt to utilize tasks and materials that have reinforcement value. Choosing tasks on the basis of their reinforcement value involves selecting tasks and materials with which students will readily interact, preferably in free play situations. (A free play situation is referred to here as one where the task is available, but the student is neither prompted to engage in it nor externally reinforced for engagements.) On many occasions teaching skills through tasks with reinforcement value may involve teaching skills through toys, games, music and songs (e.g., sight words may be taught through potentially dull flashcard drills or through potentially more interesting sight word games).

If it is necessary to teach skills for which few functional tasks can be readily devised, then games, toys, music and songs which require the performance of the skills may enable the teacher to add an intrinsically reinforcing functional component while at the same time increasing the probability that maintenance through repeated practice in other environmental settings will occur after instruction. That is, games, toys, music and songs which require the performance of skills may be used to augment academic programming and as recreational activities to provide additional practice of skills in a variety of environmental settings.

Some criteria for selecting potentially reinforcing tasks are: a) tasks should be novel or offer results that are not always predictable; b) tasks should be matched to functioning levels. Tasks which are either too easy or too sophisticated are not appropriate. However, tasks just above current functioning level should hold interest and pace development; and c) tasks should allow active engagement and manifest cause and effect relationships (Piaget, 1952).

There are at least three major advantages to teaching skills through tasks with reinforcement value: 1) skills may be reinforced by allowing continued performance of the task and/or interaction with the task materials instead of relying upon teacher delineated reinforcers; 2) students are more likely to interact with the task materials and thus perform the skills taught through them outside controlled instructional situations; and 3) there should be an increased probability that students will visually and/or aurally attend to intrinsically reinforcing tasks and task materials, thus possibly eliminating the need to systematically teach attending - a necessary prerequisite to most teaching situations.

There are two additional factors which should be considered when delimiting the types and characteristics of functional tasks. First, a task that may initially appear functional may not actually be so for

particular students who live in environments where there are few or no opportunities to perform related skills. Setting a table is a functional task through which one-to-one correspondence skills can be taught. However, if students live in an environment where they are not and may never be required to set a table, the task will not have functional value. Thus, teachers should attempt to insure that tasks are chosen that adequately represent the options that students have available in the environment in which they live or might live in the future. Second, tasks should be chosen on the basis of their facilitation of later skill development. This involves teaching tasks that will become components of higher level skills in a developmental sequence. Teaching students to count fingers as a rational counting task may not have much utility when rational counting is taught, but should have great utility when addition is taught.

In summary, when a teacher is considering what to use as vehicles for skills to be acquired and performed by severely handicapped students, tasks and task materials should be chosen on at least the basis of their: a) functional use to the individual student; b) ease of discrimination; c) accessibility to repeated practice; d) reinforcement value; 3) facilitation of skill maintenance; f) accessibility or frequency of occurrence across settings the individual inhabits; and g) facilitation of later skill development. As it is unlikely that many tasks will fulfill all the criteria delineated, it is often necessary to teach a skill through many different tasks and materials.

VII. Can the student perform the skill across persons, places, instructional materials and language cues?

A stimulus generalization paradigm may be used to conceptualize selected aspects of severely handicapped students' failure to perform skills acquired in one teaching environment in other environmental configurations.[5] The summarization of laboratory research studies concerned with stimulus generalization contained in Mostofsky (1965) suggests that a given response must be taught with the teaching environment in a specified state or configuration. After a response has been taught, variations in some well controlled aspect of the initial teaching environment can be introduced and the presence of the response in the new environmental configuration can be measured. Research findings related to stimulus generalization suggest that if dramatic departures from the initial teaching environment are arranged, performance in the changed environment will probably be substantially different from performance in the initial teaching environment. However, if the changed environment is only slightly different from the initial teaching environment, performance in the changed environment will probably differ slightly if at all from performance in the initial teaching environment.

The graduation of responding observed when the performance of a response is assessed in environmental configurations slightly or

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[5] As used here environmental configurations include language cues, persons, places and instructional materials.

dramatically different from the configuration in which the original instruction took place is known as a generalization gradient. Sidman (1960) states that, "The generalization gradient provides a mechanism whereby behavior can adapt to an environment that never exactly repeats any combination of 'stimuli.' If a successful form of behavior were to come under the control of the precise circumstances that were present at the time it was acquired, we should have to relearn the behavior each time the original situation reoccurred with its inevitable variations (p. 207)." In the following paragraphs attempts will be made to describe how a stimulus generalization paradigm may be used to conceptualize generalization across instructional materials, extraneous stimuli and relevant cues to respond.

Performance Across Instructional Materials

Assume that a severely handicapped student in a public school classroom has been taught to touch a ball when the teacher presents a small dark blue ball, a small dark blue cup and the verbal language cue, "Touch the ball." If the teacher then dramatically changes the task by presenting a large brown medicine ball three feet in diameter, a small dark blue cup and the language cue, "Touch the ball," it is relatively unlikely that the student will manifest better than a chance level of correct responding. However, if the teacher only slightly changes the initial instructional materials by presenting a small light blue ball, a small dark blue cup and the verbal language cue, "Touch the ball," it is likely that the student will consistently respond correctly to the new instructional material. To summarize, if dimensions of instructional materials are changed slightly, students tend to maintain responding or generalize across materials. On the other hand, if stimulus dimensions are changed dramatically, students tend to respond differentially or discriminate.

Performance Across Extraneous Stimuli

Extraneous stimuli, as the phrase is used here, are stimuli in the environment which are not intended to control a specified response. That is, touching a ball in response to a verbal language cue should not be a function of the size of the room, the color of the teacher's hair, the chair in which a student sits or the position of the objects on the table. However, it is possible that some extraneous features of an initial teaching environment can acquire response controlling properties. If a teacher does not allow for such a possibility, she may mistakenly conject that failure to perform across environmental configurations is solely a function of, for example, the student not attending to the form cues of the ball and the cup referred to above. In fact, however, failure to perform may be a function of dramatic changes in the chair, the table, the room, the color of the teacher's hair, or the position of the objects on the table.

Performance Across Relevant Cues to Respond

A relevant cue to respond is referred to here as a stimulus or stimulus cluster which is intended to control the response a student is to perform. In a classroom for severely handicapped students cues to respond are usually presented by a teacher or contained in instructional materials. However, such stimuli as school bells and the time on clocks also function as cues to respond.

Cues to respond typically have at least a verb component which indicates the action the student is to perform (e.g., touch, take, give, pick up) and a noun component which indicates the object of the action (e.g., touch the ball, pick up the paper). Cues to respond which have action and object components do not have to be verbal in nature: a stare by a teacher may be a cue for the student to "Sit down on a chair;" a deaf educator may use hand signals to cue a student to "Touch a ball." These cues are nonverbal but nevertheless contain action and object components. In addition, it should be noted that slight variations in the physical topography of nonverbal cues to respond may not result in differential performance. However, it is likely that dramatic variations in nonverbal cues to respond will result in differential performance. Concommitantly, when the cue to respond is verbal, slight variations in the way words are articulated will probably effect performance minimally, while dramatic articulation changes will probably effect performance significantly.

In a stimulus generalization paradigm a student is required to make topographically similar responses despite variations in dimensions of the instructional materials and extraneous stimulus constellations. Performance across different verbal language cues certainly may be conceptualized within the framework of a stimulus generalization paradigm. However, performance across different verbal language cues requires additional discrimination training to generate differential performance to the different verbal language cues.

More specifically, a teacher can issue a series of different verbal language cues to respond and the appropriate responses to the different language cues could be topographically dissimilar. For example, a teacher could present the student with a slightly different colored ball and cup on each trial and rotate the cues, "Give me the ball;" "Touch the ball;" "Point to the ball;" and "Take the ball." The student would have to respond in a topographically dissimilar way to each different verbal language cue in order to respond correctly. In this situation the stimulus generalization paradigm applies in that dimensions of the instructional materials were varied such that the student was required to respond to a slightly different instructional material on each presentation of the noun component of the verbal language cues. However, in order for the student to respond correctly it was also necessary for the student to discriminate the different verb components of the various response cues and differentially respond to those cues.

In addition, however, a teacher can issue a series of different verbal language cues to respond and the appropriate responses across the different language cues could be topographically similar. For example, a teacher could say, "Pick up many, " or "Pick up several," or "Pick up a lot," or "Pick up a bunch," and the student could respond similarly and correctly to all the different language cues.

Obviously, certain verbal language cues may present unique problems when attempting to teach a student to perform a skill across environmental configurations because the student may be required to respond differentially to components of the cues. For instance, assume that in an initial teaching environment a teacher taught 'Tom' to touch the ball when presented with a

small blue ball and a cup; a large red ball and a pillow; a small brown ball and a potato, etc. and then proudly announces to Tom's mother that he now can indicate what a ball is when given a verbal language cue. That night, Tom's mother places a small blue ball and a cup in front of Tom and says, 'Give me the ball' and Tom fails to give the ball to his mother. If it can be assumed that Tom did not fail due to changes in the instructional materials or because he responded to extraneous stimuli in the home environment, the reason for failure may be due to the change in the verbal language cues used. If the reasons Tom failed are related to the verbal language cue used by his mother, then at least two hypotheses seem tenable: First, Tom may not have responded differentially and independently to the specific verb and noun components of the language cues in the school and home environments. That is, he may have responded to only the noun components of the language cues and therefore did not differentially respond to the different verb components. Second, Tom may have responded differentially and independently to the specific verb and noun components of the verbal language cues but did not know what action to perform to the "Give" component.

The implication for educational programming is that to teach a student to perform a skill across enviornmental configurations the student must be taught to appropriately respond to common variations in verbal language cues, extraneous stimuli, and task materials that frequently occur across environmental configurations.

If the success of a program is to be assessed in terms of student performance of skills across environmental configurations, then the objective for each major skill taught in a program should include student performance of skills across such selected environments. For example, the instructional objective for a one-to-one correspondence skill might be: Given the language cues, "Give each____a____," "Give every____a____," or "Put a (____) in each (____)" by at least three different control figures (e.g., teacher, mother, peer) across at least three settings (e.g., classroom, playground, home) and across at least three functional tasks (e.g., setting the table, passing out cookies, dealing cards) the student should perform the skill.

Potentially, there are many instructional strategies which could be employed to insure that students master objectives. Perhaps the following strategy may be reasonably effective. If students are to perform the skills across functional tasks, then teach the skill through a combination of functional tasks and nonfunctional tasks which fulfill the task selection requirements previously delineated. For instance, teach the students one-to-one correspondence through such tasks as passing out juice cups and giving each bear a block. If the students are to perform the skills across settings, then it may be advantageous to teach the skills in several settings. For instance, teaching might occur in gym, on the playground, in the hall, in the bathroom, and in a kitchen area using tasks appropriate to those areas. If it is necessary that students perform skills under the direction of several control figures, then several control figures may be used in instruction. If the students will likely encounter varied language cues to respond, then instruction should include cues to respond which frequently occur.

Many educators evaluate instructional program efficacy in terms of how quickly students advance through the steps of a task analysis or curriculum sequence. However, efficacy should also be assessed in terms of whether the students can perform skills across persons, places, instructional materials and language cues. Insuring that students can perform skills across environmental configurations in many instances may slow the students advancement through the steps of a curriculum sequence. To account for this, educators will have to incorporate measures of both rate of advancement through a curriculum sequence and performance of skills across environmental configurations into their evaluation of program efficacy.

VIII. Can a student perform a skill without directions to do so from persons in authority?

Individuals labeled severely handicapped are often referred to as externally controlled. That is, persons in authority usually tell them what skills to perform; how and when to perform the skills; if they perform the skills correctly or incorrectly; if they perform the skills incorrectly how to rectify the errors, etc. While responding appropriately to specific cues provided by persons in authority is the responsibility of all adults, there are situations in which performance is crucial but in which persons in authority are not present. In such situations it appears that severely handicapped students are particularly deficient and therefore quite vulnerable. One way to compensate for such a deficit is to teach specific skills and then insure that those skills can be performed appropriately across environmental configurations without specific verbal cues being provided by persons in authority. Perhaps the following will elucidate.

There are situations in which it is appropriate for individuals to make a specific response to a specific cue provided by a person in authority (e.g., following a list of verbal directions; recording the food order of a customer in a restaurant). There is little doubt that severely handicapped students can acquire such skills and that such skills have enormous functional value. However, in these situations persons in authority are continuously providing the relevant cues to respond. Obviously, such cue-response relationships are appropriate in some situations, but extremely inappropriate in others in that extraordinary dependence upon the cues of others in authority is fostered, and persons in authority are in effect determining all responses.

There are also situations in which it is appropriate for individuals to make a series of responses to only one cue provided by a person in authority (e.g., "Change the tire;" "Make the salad;" "Start working;" "Clean the tables"). Again, there is little doubt that severely handicapped students can acquire such skills and that such skills also have enormous functional value. However, here also persons in authority are providing at least the initial cues to respond and the problems delineated above may be attendant.

Undoubtedly there are thousands of situations in adulthood which require responding specifically to verbal or other cues provided by persons in authority. However, there are also situations which require that adults engage in a response or series of responses in the absence of cues to respond provided by persons in authority (e.g., when a person sees a burning sofa; when a person is alone and cuts a finger; when a person is lonely or lost; when shopping for food or clothing). If an individual responds appropriately when persons in authority are not providing specific cues to respond, that individual may be construed as manifesting self-initiated performance skills. Obviously self-initiated performance skills are crucial to the independent functioning of severely handicapped students.

Finally, there are situations which require that a person engage in a series of responses, evaluate the correctness of the responses, and, if necessary, correct mistakes without being verbally cued by an authority figure. For example, if a person is confronted with a burning sofa, he/she might smother it with a throw rug, check to see if it is still smoking, and if necessary, pour water on it.

It has been our experience that many classroom activities designed for severely handicapped students have not included manipulations that allowed the students to: a) perform skills in the absence of cues provided by persons in authority; and b) evaluate and, if necessary, correct errors.

Thus, we are suggesting here that teachers determine if it is appropriate for a particular skill to be performed without specific cues to do so provided by persons in authority. If so, teachers should arrange for such performance. In addition, if it is appropriate that a student perform a series of responses, evaluate the responses, and if necessary, correct errors, then teachers should also arrange for such performance.

In the recent past the writers and their colleagues have made attempts to teach severely handicapped students the skills necessary to initiate responses or a series of responses, to evaluate the correctness of the responses made, and if necessary, to correct errors with few if any cues provided by persons in authority. Such skills are referred to here as self-regulation skills. Nietupski and Williams (1974) conceived of rudimentary self-regulation skills as consisting of at least four basic steps:

1. Detecting or defining the task.
2. Arriving at alternative ways to complete the task ←
   if the task is not correctly completed.
3. Implementing an alternative.
4. Assessing the outcome of the alternative
   if task correctly completed, end of task.

In the Nietupski and Williams (1974) paradigm students may fail to self-regulate responding because: a) they do not self-initiate steps in the self-regulation strategy; b) they fail to detect or define the task; c) they fail to arrive at an appropriate way to complete the task; d) they fail to implement an appropriate alternative; or 3) they fail to evaluate the outcome correctly.

It is suggested here that self-regulation may be incorporated into a curriculum for severely handicapped students as follows: When a skill is taught, if practical, the students should be required to initiate all components of the self-regulation strategy to complete tasks related to that skill without verbal cueing from persons in authority. For example, if students are acquiring skills related to cooking, they should be required to initiate the preparation of their own meals without verbal cueing from authority figures. Stated another way, whenever a new skill is taught the students should be required to complete tasks related to the skill, generate alternative ways of completing the task, implement an alternative, and check the appropriateness of the alternative implemented. Self-regulation strategies should not be taught as segmented or isolated curriculum entities but as integral parts of all activities in which students participate.

Hopefully, if educators in conjunction with parents and other concerned persons can teach students to perform situationally appropriate skills without specific direction to do so, we will more closely approximate the longitudinal objective of independent adult functioning.

Summary

Several basic components of instructional programs for severely handicapped students were delineated and described. Obviously, each component is in need of further elaboration and refinement and methods of incorporating them into longitudinal curriculum sequences must be operationalized. The possibility exists that adherence to all components when attempting to teach all skills might be impractical and irrelevant. However, it has been our unfortunate experience to observe students fail because we did not systematically consider and accommodate to relevant instructional variables. Perhaps if teachers absorb at least the components delineated into their educational services, the general skill repertoires of the students in their charge will be enhanced substantially.

In addition, it should be noted and emphasized that there is no doubt that the version of an instructional program offered here will evolve into a different form in the future. Some components will probably be rejected, some will be expanded, and others will be added. Hopefully, what happens to this version will be a function of increased awareness of the students we are attempting to serve.

Finally, teaching technologies and other information related to the provision of the best possible educational services to severely handicapped students are in the initial stages of development. On the other hand, educators throughout the nation are being asked, ordered, or voluntarily striving to provide educational services to such students. When such an information/

service gap exists, frustrations and failures are inevitable. Hopefully, through the collective efforts of many persons from many orientations and disciplines we will be able to demonstrate in the near future that comprehensive, longitudinal, and quality educational services can be generated and those services will result in substantial developmental changes in the functioning levels and ultimate life styles of citizens who at least for the moment, are referred to as severely handicapped.[6]

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[6] The reader interested in securing information concerning the materials, references, curriculum sequences, etc. referred to in this paper is encouraged to write Dr. Lou Brown, 427 Education Building, University of Wisconsin, Madison, Wisconsin 53706. Some materials will be sent free of charge. If there is a charge, the reader will be referred to the appropriate vendor.

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THE CRITERION OF ULTIMATE FUNCTIONING AND PUBLIC SCHOOL SERVICES FOR SEVERELY HANDICAPPED STUDENTS[1]

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Part I - Positions and Assumptions

Not too long ago there were few, if any, educational services for mildly retarded or mildly handicapped students in American public school systems. Self contained schools and self contained classes within regular schools were generated and proliferated soon thereafter. For years self contained schools and self contained classes within regular schools were considered the most efficacious models in which to provide educational services to mildly handicapped students.

In 1968 Dunn published his now famous article, "Special Education for the Mildly Retarded -- Is Much of It Justifiable?". There Dunn crystalized the judgements, suspicions, and feelings of many persons in and out of special education -- namely, that the placement of mildly handicapped students into self contained schools and self contained classes was unduly restricting their general development and not preparing them to function adaptively in complex, integrated, community based postschool environments.

In the past the predominant educational service delivery models generated for the majority of severely handicapped students in this country were (a) placement in large self contained residential facilities

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[2] In L. Brown, N. Certo, and T. Crowner (Eds.), Papers and programs related to public school services for secondary age severely handicapped students. Vol. VI, Part 1. Madison, WI: Madison Metropolitan School District, 1976. (Republished: Hey, don't forget about me: New directions for serving the severely handicapped. Reston, VA: Council for Exceptional Children, 1976, pp. 2-15).

(institutions), (b) placement in self contained schools, (c) maintenance at home, and (d) the use of private facilities such as churches or facilities supported by private associations concerned with providing services for retarded citizens.

Within the past 5 years, due to encouraging judicial, executive, and legislative reactions to the advocacy activities of many enlightened parents and other persons and groups, formerly rejected severely handicapped students are now being served in community based public schools. Unfortunately, it seems that the overwhelming majority of severely handicapped students now in public schools are being served in self contained facilities. Self contained programs within regular schools for mildly handicapped students have been and are being rejected.

There is no doubt that the spirit of the times requires that severely handicapped students be allowed to grow within the least restrictive developmental environments. Placement in large multipurpose institutions, sustained maintenance at home, and/or sustained placement in self contained classes within segregated schools is generally restrictive. The community must create other more educationally tenable developmental environments.

Severely handicapped students should be placed in self contained classes in regular schools. Severely handicapped students should eat, recreate, assemble, travel, ambulate or be ambulated, play, read, study, and learn with students of all developmental functioning levels. Why? Because severely handicapped students will no longer be locked up in isolated dehumanizing institutions; they will no longer be hidden in homes; they will no longer be rejected from public schools; they will no longer be sheltered from society. They have the right to be visible, functioning citizens integrated into the everyday life of complex public communities.

The Logic of Homogeneity

One of the most pervasive, and in our view questionable, philosophic assumptions in our society is that homogeneity is a generally positive objective that should be approximated if not realized. This general quest to cluster according to similarities, to stratify on the basis of differences, and to realize uniform compositions is referred to here as the logic of homogeneity.

Discernible manifestations of the logic of homogeneity are prevalent in many aspects of our society. Predetermined efforts have been made to group according to skin color, family heritage, verbal accent, sex, religious affiliation, military rank, professional or paraprofessional status, wealth, and academic degree, to name only a few. These manifestations are often based on such assumptions as (a) people do better and are happier if they are with their own kind, (b) people who are different than us do not like us, (c) our cultures are too different, (d) if God wanted us to be together, She would have arranged it, and (e) overcoming the communication problem is not worth the effort.

In education generally there have been many manifestations of the logic of homogeneity. For example, students have been "tracked" within and between schools and classes, males and females have been stratified in "health" and physical education classes, and parochial schools and athletic leagues are prevalent.

In special education, the logic of homogeneity abounds to the point of absurdity. Special educators have established self contained classes, self contained schools, groupings for the orthopedically handicapped, the blind, the mildly retarded, the emotionally disturbed, and the trainable mentally retarded, and on and on ad infinitum. By affording credence to the presumed positive properities of the logic of homogeneity within educational systems, educators have systematically, although inadvertently, impeded many handicapped and nonhandicapped students from acquiring the skills, values, and attitudes necessary to function in heterogeneous multifaceted and interpersonally complex adult environments.

Many persons concerned with providing developmental services to mildly handicapped students have rejected, or are now in the process of rejecting, the basic tenets of the logic of homogeneity. Those persons concerned with providing the best possible educational services to severely handicapped students should do the same. However, it should be noted and emphasized that certain kinds of homogeneous groupings in selected settings for selected purposes may be educationally, medically, and socially tenable. That is, to reject the logic of homogeneity completely is probably as irrational as to absorb it completely. The point is that the logic of homogeneity as it relates to the provision of educational services for severely handicapped students is generally negative. Homogeneity must be scrutinized carefully and rejected in favor of heterogeneity whenever possible.

The Logic of Heterogeneity

The logic of heterogeneity leads to the position that persons of differences or dissimilarities in almost all aspects of existence should interact. Most postschool community based domestic, vocational, and recreational environments are fundamentally heterogeneous in nature. If severely handicapped students are to be expected to function effectively in heterogeneous community environments, as many preceding developmental experiences as possible should represent that heterogeneity. Every time educators make a decision affecting the longitudinal development of a severely handicapped student, they must seek manifestations of the logic of heterogeneity.

If educators had ascribed to the logic of heterogeneity in the past, they would not now be confronted with ways in which to dismantle "state schools", self contained public schools, and other forms of segregated instructional settings. At this time it appears that one of the most realistic manifestations of the logic of heterogeneity would be to encourage comprehensive and longitudinal involvement with nonhandicapped persons in a diversity of constantly changing community environments.

Degrees of Instructional Inference

Most teachers assume varying degrees of instructional inference when relating to students, regardless of their functioning levels. Generally, the less handicapped the student, the higher the degree of inference regarding the performance of that student. For example, teachers of non-handicapped students often teach the rational counting of wooden pegs. After a student has performed at criterion on this task, it is usually inferred that the student can also rationally count eating utensils, money, and completed work units. This, of course, represents a relatively high degree of instructional inference. Implicit in relatively high degrees of instructional inference is the assumption that from specific training on circumscribed or core tasks, students will abstract the critical factors, strategies, rules and concepts from the training environment, and apply them in new and varied environments.

At this stage in the evolution of instructional technology, critical factor strategies can be afforded little educational credence. That is, to our knowledge, it has not been empirically demonstrated that the teaching of a few critical skills has resulted in substantial increases in the general developmental functioning levels of many severely handicapped students. Thus, teachers of severely handicapped students can rarely, if ever, infer that because a student performs a particular skill in an artificial setting he or she can also perform that skill in other more natural settings.

Unfortunately, it may be necessary to teach severely handicapped students all the skills, concepts, actions, and responses required for adaptive performance in all the postschool environments to which they will be exposed. Such an instructional possibility is referred to here as a zero degree inference strategy. That is, no inferences are made that training to a criterion on any task in one situation will result in criterion performance in similar but different situations requiring similar or slightly different actions. Each time a situation changes for a severely handicapped student, it will be necessary to empirically verify that he or she can perform the skills required by that new situation.

Occasionally it has been demonstrated that severely handicapped students can acquire relatively complex skills. However, rarely have severely handicapped students, taught to perform complex skills in artificial instructional settings, been able to perform relevant versions of those skills in natural community settings. Thus, until such time that critical factor strategies are demonstrated empirically effective in developing the skills necessary for severely handicapped students to perform a variety of skills in a variety of community settings, with a variety of persons, language cues, and materials, it appears that approximations of zero degree inference strategies offer higher probabilities that students will be able to perform acceptably in less restrictive environments as adults.

Educational Service Characteristics

As large numbers of severely handicapped students enter into less and

less restricting community environments, the current performance differences between them and their nonhandicapped age peers will be quite dramatic. Initially such dramatic differences will engender fear, frustration, rejection, and hopelessness in many sincere and well meaning individuals, both in and out of the human services movement. In time, the initial negative emotional reactions will abate and the collective consciousness and energies of the community will be redirected toward providing the best possible developmental services.

In some school districts attempts will be made to maintain as much physical distance as possible between severely handicapped and nonhandicapped citizens: Old school buildings will be opened or renovated and only severely handicapped students will be assigned to them; new school buildings will be constructed under the guise that the students of concern are in need of "special A, B, or C". However, as educators realized when they attempted to provide specialized services to mildly handicapped students, segregating procedures impede achievable approximations of human potential.

At least one major question should be addressed: Over long periods of educational time, what are some of the fundamental characteristics of the most creditable educational services based upon the best available information? The position taken here is that in addition to the constant quest to realize the criterion of ultimate functioning and to manifest the logic of heterogeneity, there are at least three additional factors that must be considered basic characteristics of educational services for severely handicapped students.

First, specialized educational services should be provided as soon after birth as possible. The reasons for early educational intervention as it relates to the involvement, acceptance, and training of parents, and longitudinal human development are obvious. The point of emphasis here is that if any child is identified as, or is at risk of becoming, severely handicapped on Monday and a public school contract is not made until Wednesday, it is one day too late.

Second, educational services for severely handicapped students must be comprehensive and coordinated toward educational development. Severely handicapped students manifest a variety of developmental delays and require at least the expertise of physical, occupational, language, and medical therapists, persons capable of providing visual and auditory assessment and habilitation, as well as the general resources of the educational community. On the other hand, it is also obvious that, although the multidisciplinary team is a "sound good" phrase, such a concept rarely produces coordinated and empirically verified educational outcomes. Indeed, a challenge educators must confront and meet is the design of systems to both articulate and harvest the contributions of varied persons and disciplines and filter the persons and/or disciplines that detract from the development of empirically tenable educational services.

Third, the services that are provided for severely handicapped students must be longitudinal as opposed to episodic. An episodic intervention

refers to the brief involvement of a professional in the developmental lifestyle of an individual. There are thousands of instances when episodic interventions are empirically tenable, particularly when nonhandicapped persons are the recipients of such interventions. For example, if an individual contracts an infection, he or she can spend a few minutes with a physician, receive an injection and the problem is solved. If a muscle around an eye contracts, one can visit an optometrist and after a brief examination and a change of glasses, the problem is solved. The availability and functional validity of episodic interventions are perhaps some of the most positive aspects of this society.

The general functional invalidity of episodic interventions is a critical source of frustration for parents and professionals who relate to severely handicapped students. Parents can take their severely handicapped child for a vision examination, but in fact the professional may not be able to provide a valid diagnosis and an empirically verifiable prescription. As a result, many severely handicapped students function with uncorrected visual problems. A longitudinal approach to the problem, although requiring more time and money, obviously is warranted. The sustained coordination and ingenuity of many persons will be required before the most effective visual prescription can be empirically determined.

A similar situation exists when parents take their severely handicapped children to the standard multidisciplinary team of experts. About 2,000 professionals representing 1,400 disciplines at an enormous cost spend from 30 to 37 minutes each with a severely handicapped student. After this series of episodic interventions, programmatic recommendations are then made to parents and teachers. Generally, few followup efforts are attempted to ascertain the empirical value of the recommendations and/or to suggest changes in programming based on the progress of the child. The educational outcomes are unfortunately predictable.

The Criterion of Ultimate Functioning

Large multifailure residential facilities and other segregated facilities for adult severely handicapped citizens will be replaced by complex, integrated, developmentally facilitative community models. Thousands of severely handicapped citizens will attend church, shop, wait in the offices of physicians, ride public buses, wash dishes, attend movies, use restrooms, cross streets, and cheer at football games with less handicapped and nonhandicapped citizens. If severely handicapped adult citizens are to function effectively in heterogeneous community environments, both handicapped and nonhandicapped citizens will require longitudinal and comprehensive exposure to one another. Such exposure will enhance the probability that the skills, attitudes, and values so necessary for tolerance, understanding, and absorption will be realized.

The criterion of ultimate functioning refers to the ever changing, expanding, localized, and personalized cluster of factors that each person must possess in order to function as productively and independently as possible in socially, vocationally, and domestically integrated adult

community environments. Since severely handicapped citizens will ultimately function in settings which contain less handicapped and nonhandicapped citizens, the majority of the developmental environments to which most severely handicapped citizens are now exposed will require substantial changes. Longitudinal segregation, whether manifested in residential institutions or self contained schools, homes or classes will not culminate in the realization of the criterion of ultimate functioning.

The position taken here is that the requirements of the criterion of ultimate functioning should be the standards by which educational activities are judged as they relate to severely handicapped students. Any activity, however episodic or apparently inconsequential, must be related to the criterion of ultimate functioning, or that activity should be terminated. Thus prior to the initiation of any interaction with the severely handicapped students we must at least ask the following questions:

1. Why should we engage in this activity?
2. Is this activity necessary to prepare students to ultimately function in complex heterogeneous community settings?
3. Could students function as adults if they did not acquire the skill?
4. Is there a different activity that will allow students to approximate realization of the criterion of ultimate functioning more quickly and more efficiently?
5. Will this activity impede, restrict, or reduce the probability that students will ultimately function in community settings?
6. Are the skills, materials, tasks, and criteria of concern similar to those encountered in adult life?

In the following pages attempts will be made to communicate the idea that many educational assumptions and practices currently in operation or in proposal, although appearing educationally sound and expedient, actually interfere with the realization of the criterion of ultimate functioning.

Part II

Instructional Practices

For the past several years we have made attempts to develop instructional programs for severely handicapped students in community based public school zero exclusion educational settings. In addition, we have had the opportunity to visit many similar educational programs around the nation in an attempt to both provide and receive technical assistance. As a result of our experiences we have modified many of our attitudes, techniques, assumptions, and instructional practices as they relate to educational strategies that are typically used or advocated for use with severely handicapped students.

As we tried to relate many of our instructional practices to the standards of the criterion of ultimate functioning, many inadequacies and failures surfaced. In this section we will describe some of the instructional practices we formerly recommended for general use, some of the difficulties we

have encountered with those practices, and some of the adaptations we are currently entertaining.

The Relative Value of One-to-One Instructional Arrangements

It has often been proposed that severely handicapped students need one to one instruction. Undoubtedly, one to one instruction has educational validity. In fact, all children, whether or not they are handicapped, are probably in need of, and should receive, the undivided attention of an adult during some portion of their school day. The salient issue here is related to the proportion of the school day that should be consumed with one to one instructional interactions as opposed to larger ratio interactions.

It is generally assumed that the more one to one instruction a student receives, the more educational advancement can be expected in the long run. However, after a considerable number of failure experiences over a long period of time, we have rejected that assumption. It now seems reasonable to provide fewer one to one instructional arrangements and more arrangements that involve (a) group instruction, (b) clustered individualized instruction in which one teacher engages in individualized interactions with a cluster of three, four, or five students, and (c) instruction that generates adaptive interstudent interactions in the absence of the direct involvement of persons in authority.

Obviously, one to one instruction is enormously expensive in terms of personnel, time, and money. If the only issue was expense and not educational development, educators would be morally bound to provide such instruction. However, in addition to expense there are other more significant educational reasons for minimization of one to one instructional arrangements.

First, one to one instructional arrangements typically include a teacher providing a cue to which a student is required to respond. When the criterion of ultimate functioning is considered, extensive longitudinal use of teacher cue/student response paradigms prevents or interferes with the acquisition of self initiation skills. Educators have inadvertently developed students who will perform well if a specific teacher provides certain cues but who fail to perform in other settings, with other cues or other persons. Thus, one potentially negative outgrowth of the extensive use of one to one instruction in which teachers provide cues to act is that students become too stimulus bound to the cues provided by their teachers. Instruction utilizing additional arrangements may function to prevent such problems and thus assist students prepare to function in a variety of adult environments.

Second, one to one instruction where teachers provide cues to students and where students become bound to those cues impedes the development of adaptive interstudent interactions. Time and time again situations are reported in which students play a game effectively with a particular teacher, parent, or university student in training, but cannot or will not play with an age or developmental peer. This, of course, is a developmentally unsound outcome in that the student is supposedly preparing to ultimately function in an environment where a substantial amount of his life will be spent

relating to, enjoying, and learning from and with a variety of age and developmental peers.

Third, it is often hypothesized that a particular student is "not ready for group instruction" due to a variety of medical, behavioral, and educational deficiencies. Thus, teachers often enter into one to one instructional arrangements assuming that the skills the student develops in one to one settings are necessary for, and will culminate in, adaptive performance in group settings. In a large number of situations this has proved to be a false assumption. Indeed, just as teachers learn to function in one to one instructional settings and malfunction in group instructional settings, so do students. The strategies that we are attempting to develop currently require that all students, no matter what their level of functioning, receive some instruction in group instructional arrangements.

There seem to be at least two additional difficulties that might arise from the overuse or misuse of one to one instructional arrangements. First, teachers who develop one to one instructional skills often do so at the expense of the development of group instructional skills. In the past, when attempting to train teachers to work with severely handicapped students, we would begin the training sequence by placing university students in one to one situations on the wards of a residential institution. Often this was an ineffective training experience even though many trainees became quite effective teaching one child to perform one skill. Many of the teaching skills necessary to do so were incompatible with the clustered individualized teaching of groups of 3, 4 or 5 students in public school classrooms who manifested varying degrees of behavior management problems and who required different instructional materials, interaction styles, and response consequences.

Second, in many educational settings in which one to one instruction is emphasized, the situation ultimately arises in which (a) there are more students than teachers and (b) the students do not have appropriate self regulated play, work, or social skills. Thus, an unfortunately typical scene is to witness a teacher, an aide, a parent, and a practice teacher working in one to one instructional arrangements with four students on one side of the room, while the remaining students are restrained to chairs, roll on floors, self stimulate, or self mutilate in other parts of the room or "watch TV".

Obviously there are a substantial number of technical problems related to larger ratio instructional arrangements. However, it appears more developmentally tenable to this point to attempt to generate instructional procedures that solve the problems that accrue from larger ratio arrangements rather than to revert to an inordinate use of one to one instruction.

Group instruction, as the term is used here, refers to a teacher attempting to teach more than one student at a given time in the same manner using the same words, materials, and so on. In our experience, group instructional arrangements are often inefficient in that (a) teachers tend to teach to the more responsive students in the group, (b) it is extremely difficult to evaluate individual progress in that it is quite cumbersome to verify that

each student is performing the skills of concern, and (c) it is the rare group of severely handicapped students who progress through educational curricula at the same pace. On the other hand, the limited and carefully selected use of group instructional arrangements has enormous longitudinal practical value. Sustained attempts must be made to insure that students acquire the skills necessary to secure information from group arrangements.

In summary, the criterion of ultimate functioning requires that individuals perform in complex community settings which demand multiple person cooperation and interactive skills. Extensive use of one to one instructional arrangements over long periods of time results in few of these skills. Thus, where we once recommended the extensive use of one to one instruction, we are now recommending that students also receive a substantial amount of instruction in group and clustered individualized arrangements and in arrangements that allow them to teach and learn from each other. The amounts of time allocated per day to each arrangement, of course, should be determined empirically.

The Use of Repeated Practice Strategies

Repeated practice strategies are teaching strategies that generate large numbers of direct instructional trials in relatively short periods of time. As severely handicapped students typically require relatively large numbers of direct instructional trials in relatively short periods of time in order to attain criterion performance on many tasks, repeated practice strategies are of enormous practical value and their proliferate use is understandable.

There are probably thousands of tasks that have been taught through repeated practice strategies to handicapped and nonhandicapped students. Solving simple mathematical equations, rote counting differentiating colors, recognizing polar opposites, and verbally labeling flash cards are but a few examples. Repeated practice strategies might be most useful when it is important for a particular skill to be taught, but there is an insufficient amount of naturally occurring instructional trials during the school day. For example, assume that a teacher intends to teach a student to put on and remove cold weather gloves. Under natural instructional conditions, the teacher may be able to provide the child with three or four teaching trials per day. However, under artificial training conditions the teacher might arrange for 20 or 30 repeated practice teaching trials per day until the child reaches criterion in the task in the repeated practice arrangement. Subsequently, the student can be taught to perform the skill under natural life conditions. In this situation, and in many similar situations, there are relatively few differences between the actions taught under repeated practice arrangements, and the actions required in the natural environment.

Repeated practice strategies have been and will continue to be used to teach many valuable skills to severely handicapped students. However, although there is little that is inherently questionable about repeated practice strategies, the proliferate use and subsequent teacher reliance upon such strategies tends to foster the use of artificial instructional materials, tasks, and settings and the formulation of questionable educa-

:ional objectives and performance criteria.

In an attempt to minimize or avoid the potentially deleterious effects associated with the sustained overuse of repeated practice strategies, at least three alternatives seem reasonable. First, teachers can include a substantial number of functional, as opposed to artificial, tasks in the curriculum. Second, teachers initially can utilize artificial tasks and criteria and then teach students to perform the developed skills in natural settings. For example, touching polar opposites as they are presented via a teaching machine can be considered tenable only if criterion performance on that artificial task if followed by empirical demonstrations of the functional use of polar opposites in natural settings. Third, teachers can increase the number of single person and multiple person peer game skills. Games are crucial educational vehicles in that they are generally more intrinsically interesting than two dimensional two choice discrimination tasks requiring responses. They can be used to develop and maintain valuable interstudent language, reading, math, and social skills. Finally, they can enhance the probability of performance across places, persons, and materials in that students can readily engage in games in settings away from school. Again, the point here is that criterion performance of a skill as a result of a repeated practice strategy in an artificial setting does not often result in the acceptable performance of that skill in natural environments.

Consistent Inconsistency or Systematic Variation

Teachers have often been confronted with a student who does well interacting with one adult, but does not interact with others. For example, Johnny may perform for Ms. Jones, but not for anyone else. It might be argued that since it is crucial for Johnny to perform, Ms. Jones should be encouraged to work with him until some time in the future. However, when this strategy is referenced against the standards of the criterion of ultimate functioning, the potential deleterious effects become readily apparent. In heterogeneous adult environments, citizens are required to respond to, and in the presence of, a wide variety of persons. By arranging such circumscribed actions and reactions, a teacher is systematically impeding the development of the skills necessary for independent survival in heterogeneous adult communities. In an attempt to minimize the development of such circumscribed interactions, many strategies are no doubt possible. However, there are several strategies that seem to offer reasonable promise.

Each time a student is taught a functional skill or game, it might be required that the skill be performed (a) in reaction to, or in the presence of, at least three different persons, (b) in at least three different natural settings, (c) in response to at least three different sets of instructional materials, and (d) to at least three different appropriate language cues. To illustrate, assume that a student is taught to play a game with a ball in a classroom. The teacher then must either teach the student to, or empirically verify that the student can, play ball (a) at the playground, (b) at home with a peer, a parent, and a sibling, (c) in response to such verbal language cues as "throw it", "hit me", "zip it over here", and (d) with basketballs, baseballs, and colored plastic balls.

The verbal language cue component of any strategy is particularly crucial in that teachers often inform parents that a student reached criterion on a specific task. Parents often attempt to induce the performance of that skill at home, but fail. Further analysis often reveals that the teacher use one verbal language cue (e.g. "Go find your") and the parents used another (e.g. "Get me"). Attempts to standardize the verbal language cues so that both the teacher and the parents use exactly the same words are longitudinally questionable in that in heterogeneous adult community environments different people use many verbal language cues that require the same response. The standardization of variation on the other hand, may enhance performance across verbal language cues. Thus, when a student is taught to perform specific skills in response to a particular verbal language cue, the task should not be considered mastered until the student performs the task in response to the other verbal language cues in his natural environment that require the same response.

It seems that teachers have several available options to insure that students perform accurately and consistently to varying cues. For example, assume that four verbal language cues are used in the natural environment in relation to a particular skill. A teacher could use a consecutive strategy and teach appropriate responding to the first, second, third and fourth verbal language cues respectively until the students respond appropriately to all four cues when they are presented randomly. A teacher could use a concurrent strategy in which students receive training on all four cues at the same time until they respond appropriately to all four cues when they are presented randomly. A teacher could use a combined or a different strategy. Regardless of the particular strategy, students must be prepared to perform in complex natural environments that are constantly varying and evolving. Thus, rather than support the orientation that the instructional environments of severely handicapped students should be standardized, we are suggesting that their instructional environments should be "consistently inconsistent" or systematically varied.

Toward Naturalized Curricula and Schools with Small Permeable Walls

The instructional materials, tasks, consequences, objectives, and criteria to which severely handicapped students are exposed in educational settings should resemble those that students will encounter and need in community domestic, social, leisure, and vocational settings. However cumbersome, time consuming, inconvenient or expensive it may be to do so, the pegs, felt squares, pictures of money, tokens, pictures, edible consequences and many, if not all, of the commercially available kits and irrelevant paper and pencil tasks should be faded out. Real money, real streets and cars, real people, real stores, real sounds and smells, real tools and objects, real group homes, real world settings, real appliances and utensils, real motor skills, and real ridicule, rejection, and disappointment must replace them. An empirically verifiable naturalized life space curriculum designed to teach the skills required in heterogeneous community environments is the order of the day.

There are at least three major reasons why curricula for severely handicapped students should be naturalized. First, artificial materials

and settings seldom provide students with the information needed to solve practical problems in natural settings. Because a severely handicapped student can solve the problem "2+ __ = 4" on a commercial worksheet in a classroom, it does not necessarily follow that he will be able to respond correctly to the problem in which four people will be eating dinner and there are only two chairs at the table. Crucial information contained in the latter functional task is not present in the former artificial paper and pencil task.

Second, the actions and criteria required by many of the most popular artificial tasks and materials are often not the crucial actions required in more functional environments. Artificial tasks and materials often require touching, marking, and verbally labeling actions. Functional tasks, materials, and criteria, on the other hand, require picking up, getting, showing, assembling, distributing, responding motorically to printed stimuli at community accepted rates, latencies, and durations. Certainly there are situations in which it is feasible to start with rudimentary movements, limited to isolated instructional sequences, and artificial materials, but education should never stop there. It should not stop until the teacher has demonstrated empirically that these students can function as independently as possible in the most open, positive, and actualizing environments imaginable.

Third, since we are preparing students to function in heterogeneous adult environments, most of the necessary training experiences should be conducted in extra-school building environments. The school as manifested by a building may be necessary, but it is not sufficient as the major or only facility needed to prepare severely handicapped students to reach the criterion of ultimate functioning. These students need schools with small permeable walls. Instead of bringing sheltered workshop tasks into a school workshop, instructors should disband the school workshop and teach the students the required skills at real workshops. Instead of using a "home economics room" in a public school, teachers should use real natural homes, foster homes, and group homes as the locations for the development of crucial self help, grooming, social and domestic maintenance skills. Similarly, other vocational, shopping, service procurements, and leisure skills should be taught during and after traditional school hours at real bowling alleys, theatres, stores, restaurants, swimming pools, office buildings, laundries, and motels.

Perhaps it is appropriate here to relate to the relative merits of simulated training experiences. There is no doubt that criterion performance on simulated tasks can be a valuable adjunct to the development of many crucial developmental skills. In fact, under certain circumstances it may be construed as almost mandatory that simulated experiences be utilized (bus riding and street crossing seem reasonable examples). However, severely handicapped students do not allow the degree of inference necessary to assume that criterion performance on a simulated task guarantees criterion performance in the environment in which the skill will ultimately be required. There can be no substitute for empirical verification of the performance of a skill in the natural environments in which the skill is required.

If we now had available to use the most tolerant of all possible communities, an unlimited budget, the collective use of the best professionals in existence, all necessary enabling legislation, the most advanced service delivery models, ideal parents, and excellent medical care, we still would not be able to provide severely handicapped students all needed services. The skills of our students are limited by the information we have within our grasp. The information we have within our grasp is tragically meager. If substantial improvements in services to severely handicapped students are to accrue, new information must be generated. As educators we must realize that we are infants in this area, that most if not all of our pet theories must be revised, and that we need to expose our ideas and practices to the scrutiny of all. We must now confront our weaknesses, failures, and insecurities and set about the long hard task of demonstrating, rather than inferring, the best possible services for a most deserving group of citizens.

Dunn, L.M. Special education for the mildly retarded -- Is much of justifiable? Exceptional Children, 1968, 35, 5-22.

THE EDUCATION OF ALL HANDICAPPED CHILDREN ACT
PUBLIC LAW 94-142

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After years of work by parents, educators and advocates of handicapped individuals: Public Law 94-142 was signed by President Ford on November 29, 1975. This signing followed overwhelming support from congress where it was passed 404 to 7 in the House of Representatives and 84 to 7 in the Senate. The law is designed to

> "....assure that all handicapped children have available to them...a free appropriate public education which emphasizes special education and related services designed to meet their unique needs, to assure that the rights of handicapped children and their parents or guardians are protected, to assist States and localities to provide for the education of all handicapped children and to assess and assure the effectiveness of efforts to educate handicapped children."

P.L. 94-142 calls for a sharply increased federal commitment in order to insure full and appropriate educational services. There are two impressive aspects to the new law: 1) the size of the financial assistance that is authorized; and 2) the policies required in the delivery of services to the handicapped. P.L. 94-142 contains the following major provisions.

Authorized Allocations. Allocations are currently based on the Mathias formula established under P.L. 93-380. This formula multiplies the number of children in a state (ages 3 to 21) by $8.75. P.L. 94-142 provides for a gradually escalating funding formula designed to increase the federal share in supporting the excess costs involved in educating handicapped children. This entitlement formula goes into effect in Fiscal Year 1978 and increases each year until FY 1982.

FY 1978	5%	of the national average per pupil expenditure	X	# of handicapped students	$ 387 million
FY 1979	10%				$ 775 million
FY 1980	20%				$ 1.5 billion
FY 1981	30%				$2.32 billion
FY 1982 and succeeding years	40%				$3.16 billion

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Thus, states can receive funds equal to the number of handicapped children between 3 and 21 receiving special education services times a specific percentage of the national average per pupil expenditure for students enrolled in public elementary and secondary schools.

Counting Limitations. To limit overcounting of children as handicapped, only 12 percent of the total school age population between the ages of 5 and 17 can be designated for federal allocations. No more that 2 percent of that school-age population can consist of children considered to have specific learning disabilities. In addition, children counted under Title I of the Elementary and Secondary Education Act may not be included under this act.

Pass Through. During FY 1976 and FY 1977 funds are provided to the state education agency and that agency controls their distribution. Beginning in FY 1978 50% of these funds will pass directly through to local educational agencies. This increases in FY 1979 to 75% pass through and thereafter remains at this level. However, school districts whose total allotment is less than $7500 per year are not eligible to receive this direct federal aid and their entitlements will be pooled and distributed by the state education agency. This should encourage cooperative special programs between small districts.

State Requirements

To be eligible for assistance, a state must demonstrate to the federal government that it has adopted an effective policy to assure all handicapped persons a free and appropriate public education. This appropriate public education must be provided to all handicapped children ages three to eighteen by September 1, 1978 and all handicapped children ages three to twenty-one by September 1, 1980. However, in states where mandatory service to children ages 3-5 and 18-21 is inconsistent with state law, the timeline does not apply. States must locate and evaluate all handicapped children and then set priorities for service. First priority is to be given to children currently unserviced, secondly to those children within each disability area who are the most severely handicapped and are receiving inadequate educational services.

East State plan must also include a description of programs and procedures for implementing a comprehensive system of personnel development. Training must be provided for both general and special education teachers and support personnel. In addition, information derived from educational research or demonstration projects must be disseminated to teachers and administrators of programs for handicapped children.

Procedural safeguards must be established that insure that all handicapped children are educated in the least restrictive environment and that due process procedures are followed. To the maximum extent possible,

handicapped children must be educated with children who are not handicapped. Placement in special classes, separate schools or any other removel of a handicapped child from the regular educational program can occur only when the handicap of a child is such that education in regular classes (with the use of supplementary services) cannot achieve satisfactory results. Due process procedures outlined in P.L. 93-380 are reaffirmed, placing stringent requirements upon both state and local educational agencies.

1. Parents must have an opportunity to examine all relevant records regarding identification, evaluation, and educational placement of their children.

2. A parent surrogate will be appointed in cases where a child is a ward of the state or the natural parents are unknown or unavailable.

3. Parents must be consulted about and receive written notice of identification, evaluation, and placement of their child in an educational program.

4. There must be opportunity to present complaints and an impartial hearing must be available following such complaints. At a hearing, the parents have the right to be represented by counsel, present evidence, cross-examine witnesses, compell the attendance of witnesses and receive a written transcript of proceeding and decisions.

States are also required to make specific provisions within their overall state plan.

1. Record keeping and accountability for federal funds, including evidence that such funds are being used to supplement not supplant state and local funds.

2. Evaluation procedures, at least annually, for effectiveness of programs in meeting needs of the handicapped.

3. Establishment of a state planning and advisory panel. This panel advises the state education agency on unmet needs, comments publicly on rules and regulations, and assists the State in developing and reporting such data and evaluations as may be needed by the U. S. Commissioner of Education.

4. Supervision of all educational programs for handicapped children within a state regardless of the public agency actually delivering those services.

Local Educational Agency Requirements

To receive funds from the State, local educational agencies must submit an application which must include:

1. Assurance that federal funds will be used to pay for the excess costs associated with special education.
2. Procedures to identify, locate and evaluate all handicapped children
3. Establish policies and procedures regarding confidentiality of data.
4. Establish a goal of providing full educational opportunities to all handicapped children.
5. Establish a detailed timeline for reaching the goal of full educational opportunities.
6. Describe the kinds and numbers of facilities, personnel and services necessary to accomplish the goal.

The state education agency has considerable power to withhold funds from local educational agencies if those agencies fail to comply with the above requirements.

Individualized Educational Program. To be appropriate, educational services for handicapped individuals must focus upon individual needs. Recognizing this fact, the law requires both state and local educational agencies to insure that an individualized educational program is provided for each handicapped child. This written program is to be developed jointly by qualified school personnel, the child's teacher, parents or guardians, and if possible, the child. This written program must include:

1. An evaluation of the child's current achievement level and educational performance.
2. Annual goals and short-term instructional goals.
3. A description of the specific services to be provided.
4. Specification of the extent to which the child will be able to participate in regular educational programs.
5. The projected initiation date and anticipated duration of services.
6. A schedule for checking child progress, evaluating the effectiveness of the program, and making called-for revisions in the program.

Preschool Incentive Grants. A special incentive grant of $300 is available for each 3 to 5 year old handicapped child provided special educational services. These funds will be used by state educational agencies to provide preschool services.

Architectural Barriers. The law provides for grants to pay all or part of the costs required to remove architectural barriers from educational facilities.

Evaluation. The Commissioner of Education must conduct studies to evaluate the effectiveness of states' efforts to deliver free and appropriate public education to handicapped children. These studies must be transmitted annually to Congress.

Timelines

October 1, 1977

Each handicapped child must have a written individualized educational program.

The general supervision of the education of all children receiving special education must be the responsibility of the state education agencies.

Allocations made using formulas based on a percentage of the national average per pupil expenditure.

Pass through of 50% of allocation goes directly to local education agencies.

September 1, 1978

All handicapped children ages 3 through 18 must be guaranteed a free appropriate public education.

October 1, 1978

Pass through of 75% of allocation goes directly to local education agencies.

September 1, 1980

All handicapped children ages 3 through 21 must be guaranteed a free appropriate public education.

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PROVIDING SERVICES TO THE SEVERELY HANDICAPPED: BEH'S ROLE

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In 1972, just after the decision favorable to the Pennsylvania Association for Retarded Citizens, the Bureau of Education for the Handicapped (BEH) acted to establish the cause of severely handicapped children as a national priority. By April of 1973, a BEH Task Force was created to design objectives and to develop an operating plan for the initiation of specific programs for the severely handicapped population.

From this Task Force came several items. The first was the development of a working definition of the term "severely handicapped". The definition is tailored specifically for The Program for Severely Handicapped Children and Youth, and is not necessarily appropriate for any other programs funded by BEH. The definition, as agreed to by the Task Force, is:

> "A severely handicapped child is one, who because of his physical, mental, or emotional problems, or a combination of such problems, needs educational, social, psychological, and medical services beyond those which have been offered by traditional, regular, and special education programs in order to maximize his full potential for useful and meaningful participation in society and for self-discovery. Such children include those classified as seriously emotionally disturbed, that is schizophrenic and autistic; profoundly and severely mentally retarded; and those with two or more serious handicapping conditions, such as the mentally retarded deaf and the mentally retarded blind. Such children may possess severe language and/or cognitive deprivations and evidence a number of abnormal behaviors including: failure to attend to even the most prominent social stimuli; self-mutilation; self-stimulation; durable and intense temper tantrums; absence of even the most rudimentary forms of verbal control; and they also have an extremely fragile physiological condition."

The second item which came from the original Task Force was an estimate of the number of severely handicapped children in the United States, and the percentage of those children receiving any kind of services. From the State Plans, in which State Education Agency personnel estimate the number of handicapped children in their State, the Task Force found a total of 1,405,000 children described as severely handicapped. Of this number, a rather minute percentage were actually receiving services. The population

was broken down as follows: 900,000 seriously emotionally disturbed; 5,000 deaf-blind, and 40,000 multi-handicapped.

The third thing which the Task Force accomplished was to develop an objective for severely handicapped programming. That objective was to stimulate the expansion and improvement of educational and other related services for severely and profoundly handicapped children and youth through a program of interrelated research, demonstration, technical assistance and personnel training activities.

Finally, the Task Force developed "Requests for Proposals" (RFP) in order to meet the stated objectives. In that first year of funding, two RFP's were issued. One was for the development of telecommunications systems for severely handicapped children and youth who are homebound, the other for general demonstration projects for the severely handicapped.

The telecommunications RFP was designed to explore the effectiveness of modern telecommunications technology in the provision of educational and training services for the homebound population. Nineteen proposals were received, and five funded for a period of two years.

The general RFP for the severely handicapped provided funding for programs to develop:

1) a plan for comprehensive services designed to meet the identified developmental needs of the severely handicapped,

2) a model demonstration program providing direct educational and/or training services for the severely handicapped which could ultimately be replicated throughout the country, and

3) a dissemination strategy whereby information about exemplary programs and activities could be shared.

Forty-two proposals were received that first year and ten were funded.

One rather interesting thing about the Severely Handicapped program is that there is no specific legislation authorizing its existence. If you were to read through P.L. 93-380, you will not see any reference to the severely handicapped. The program actually operates under Section 624 of Title VI-C which is a provision for auxillary services which are deemed necessary. In addition to not having specific legislation, no funds had been authorized for the purposes of supporting a program for the severely handicapped. So in the first year of operation, the Regional Resource Center Program, Early Childhood, and Media Services and Captioned Films contributed just over $2 million to make the Program for the Severely Handicapped possible.

In 1975, the second year of the program's existence, RFPs were issued in a slightly different manner. There was no new solicitation for telecommunications projects, and rather than issuing one general RFP for

demonstration programs, six different requests were sent out. The six RFPs delineated and divided the severely handicapped into areas according to primary handicapping conditions as follows: 1) auditory impairment, 2) emotional disturbance, 3) orthopedically handicapped, 4) visual impairment, 5) severely retarded children from 0 to early childhood, and 6) severely retarded youth from early childhood through age 21. The reason for dividing the RFPs in this manner was to facilitate the evaluation process, which had become cumbersome due to the great increase of proposals submitted and the great variance in the populations described in the proposal. Programs which were serving populations in more than one handicapping area could be submitted to any of the categories.

A large number of proposals were submitted in the second year, with only seven new projects funded. As is obvious, money was limited and competition quite tough. It was estimated that approximately 1,100 children were receiving direct services from the new and continuation projects.

In 1976, the same six RFPs were reissued, and eleven new projects were funded. Along with the 17 continuation projects, the budget for severely handicapped programs had now reached $3,250,000 and 1,200 children were being served.

For 1977, a few additional changes are envisioned in the funding patterns. Only five RFPs will be issued for general demonstration projects, which will reflect the collapsing of the two severely retarded categories in one. An RFP will also be developed for Outreach Projects, that is, the funding of projects which have been through a validation process to introduce their programs and concepts in specifically designated areas where services are lacking. It is estimated that four Outreach Projects will be funded. In addition to the demonstration and Outreach projects, we hope to be able to provide funding for one or two major topical conferences in the area of the severely handicapped during 1977.

The funding level will again be $3,250,000. The Severely Handicapped Programs remains a small demonstration effort. However, with recent and renewed attention, the severely handicapped population has become a priority population in most programs in the Bureau. Public Law 94-142 focuses on the severely handicapped, as well as the unserved handicapped. Personnel preparation estimates that approximately 20% of their funds will be expended on pre and inservice training of personnel to work with the severely handicapped. There were approximately eight major research projects funded this year which involved severely handicapped children. Hopefully, more programs and increased dollar commitments will become available so that by 1980 all severely handicapped children and youth will, in fact, be receiving educational services.

SERVICES FOR DEAF/BLIND INDIVIDUALS

Mr. John Sinclair
Coordinator
New England Regional Center for
Deaf/Blind Children
Watertown, Massachusetts

There are ten deaf/blind regional centers around the country including the New England Regional Center. Many of you may realize that in 1964-65 there was a rubella epidemic that swept from coast to coast. Rubella is a virus that can cause major abnormalities in the fetus if it strikes an expectant mother in the first three months of her pregnancy. The federal estimate originally was that there were approximately 20,000 deaf/blind children as a result of this epidemic. The final, or reasonably final, figures indicate that there's approximately 5;200 children. In response to the need for services for these children, the Congress passed Public Law 91-230 in 1969 which provides for the ten regional centers. We refer to our funding as Title VI-C.

I report to Mr. Robert Dantona, who is the National Coordinator, and his two associates, Sandy Hazen, who is responsible for the New England Regional Center and her partner, Janice Franklin. The other regional centers are in North Carolina; California; Alabama; New York; Dallas, Texas; Michigan; Colorado; Washington; and Austin, Texas. Texas is the only state that chose to go the independent route. The Texas Educational Agency Center in Austin is a regional center unto itself. The other Texas Center in Dallas is a result of the original distribution. Texas was in a region at one time, but has since broken loose from the union. The regional center was just never relocated from Dallas.

The National Center for Deaf/Blind Youths and Adults is an organization which accommodates deaf/blind adults. The 10 Regional Centers share the responsibility for a deaf/blind individual once he becomes 16 with the National Center. The 16 year old is on our records and still considered a child but information regarding him is shared with the National Center in order for them to plan what services he will need when he becomes 21.

The definition of a deaf/blind child as set forth by the Bureau of Education for the Handicapped is

> "A child who has both auditory and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that he or she cannot be properly accommodated in special educational programs, either for the hearing impaired child or the visually impaired child."

This is quite vague; it's intended to be more inclusive than exclusive. Though the definition is sometimes abused, we in New England really do

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try to respect the fact that a child must have impairment of both senses. When one is dealing with the very low functioning child like those we serve, it's very difficult to measure the child's hearing. There may be functional deafness, resulting in a very difficult evaluation. As a matter of fact, we're sponsoring a one-day workshop which some of you are attending this coming Thursday to work on this very problem and Sandy Hazen will represent the Washington interest. Hopefully, she'll take back something that they can use in the future.

There are several mandated services which the Regional Centers must offer. Others are rather unique to New England. The following description includes both mandated and unique services:

1. Case Finding--a case finding is an ongoing thing. As a matter of fact, I consider this exposure to you this morning case finding. Some of you may have a child back there in your program that you can share with me at the end of the day. I'd be glad to hear about them if you think that there is a possibility that they may be both deaf and blind. We hope very much to plug into the Child Find Programs that each state represented here has carried out or may be in the course of carrying out right now.

2. Diagnostic Evaluation is the next service. We have three or four such services around the region to which we can refer a child.

3. We provide educational programs. Since the Center staff is very small, the staff itself does not provide direct services. But we do assure that there is an educational program available to each child; an appropriate one, hopefully near his home.

4. Then we coordinate Pre- and Inservice Training at the regional and state level, as well as with individual agencies.

5. We assure Family Services in the form of training or respite care.

6. Disseminating Information and Materials is another service. We have just completed a resource bank and a bibliography that will be available to anybody who requests it.

7. Another of our responsibilities is to review programs, monitor them, and see that they are, in fact, delivering the minimum standards that they claim to be offering, and to see that Title VI-C money is being spent according to the contractual agreement. Each program is subject to a formal review annually and regular site visits during the program year.

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8. Each Regional Center is obliged to work with the individual states in a development of a State Plan for its deaf-blind population. In view of the recent Federal legislation, Public Law 94-142, Education for All Handicapped Act, such long-term planning for any such handicapped individuals is timely. Since we have been doing this for the last few years, some New England states have a considerable lead as it pertains to the foreseeable future for this small segment of the total handicapped population.

9. Research is encouraged by Regional Centers. However, it has been my experience in my five years as Coordinator that no funds have been authorized by the Bureau of Education for the Handicapped for that purpose. Priority has been given to direct services to the children.

10. An individualized Student Plan is required for children benefiting from Title VI-C funding. The format for the student plan used by the New England Regional Center is now in its third year and has proven quite acceptable, considering the fact that it is often duplicated to serve the needs of private, public, state and federal sectors. A blank student plan is available by writing to my office.

11. Innovative and Demonstrative Projects are encouraged by the Regional Center. A particularly innovative project being performed at this time is a satellite home in Providence, Rhode Island. This project is under the sponsorship and direction of The Meeting Street School. Meeting Street has rented a three bedroom apartment in a large apartment facility near a shopping mall complete with most of the services needed by typical apartment dwellers of a young age, including a MacDonalds. Normally, Meeting Street provides a day program for deaf-blind children commuting daily from their homes. Now with a live-in staff and twenty-four hour professional coverage, three children live in the apartment for a period of a month. There is a monthly rotation of these three residents, so that during the course of a full year, each of the twelve children will have lived in the apartment a total of four one-month periods. For the families of most of these children, this is the first time that they have had any such respite from the demands that too often go with having a severely multiply handicapped child reside at home. Needless to say, this is a welcome relief and an alternative from which the children seem to be benefiting. Should you wish additional information regarding this satellite home project, my office will be glad to send you what information is avilable to date.

12. Administrative Consultation is one of our major functions. Each deaf-blind program that receives direct funding must comply with the usual requirements such as: proposal writing, subcontracting, quarterly reports, year-end report, etc. Since many of the

twenty plus agencies with which we are affiliated do not have personnel in the deaf-blind areas with experience in such administrative matters, we make ourselves available to assist them in this regard. We take considerable pride in the fact that despite the federal government's heavy demand for such "deliverables" as I just mentioned, we in New England do streamline the process, while honoring their regulations.

13. Coordinating Services and Resources among programs and states is one of our responsibilities. Since the federal government has indicated that it is not their intention to have Regional Centers and Title VI-C funds available forever, it is important that the states and agencies develop this concept into their funding plans. Economic conditions in the country mandate that all agencies at all levels get as much mileage as possible out of their funding, regardless of the source. Coordination of services and resources to eliminate duplication is important.

14. A Regional Center serves as a liaison between programs for deaf-blind children and the National Center for Deaf-Blind Youths and Adults. When a deaf-blind individual is twenty-one, he/she is then the responsibility of the National Center with its main office and training center in New York City.

It has been my intention to simply give you an overview of the services of the New England Regional Center for Services to Deaf-Blind Children. Time does not permit me to go into greater detail. However, should you have any questions relative to the area that I represent, please don't hesitate to contact me.

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REGIONAL CENTERS FOR SERVICES TO DEAF-BLIND CHILDREN

1 November 1976

Area Center	States Served
Mr. Robert Dantona, National Coordinator Mrs. Latis Franklin, Project Officer Miss Sandra Hazen, Project Officer Project Center Branch Bureau of Education for the Handicapped ROB 3 Room 2134 7th and "D" Streets, S.W. Washington, D. C. 20202 . . . .(202) 472-4825	
Mr. A. Jefferson Garratt, Asst. Coordinator South Atlantic Regional Center for Deaf-Blind Children Room 449, Education Building Edenton and Salisbury Streets Raleigh, North Carolina 27611 . . . .(919) 829-3005	District of Colum Maryland, North Carolina, South Carolina, Virginia West Virginia
Dr. William A. Blea, Project Director Mr. Paul Starkovitch, Educational Consultant Southwestern Region Deaf-Blind Center 1500 5th Street Sacramento, California 95814 . . . .(916) 322-2173	American Samoa, Arizona, California, Guam, Hawaii, Navajo Indian Natio Nevada
Mr. John William Crosby, Coordinator Mrs. Barbara Gambrell, Project Specialist Southeast Regional Center for Deaf-Blind Children Alabama Institute for the Deaf and Blind P.O. Box 268 Talladega, Alabama 35160 . . . . (205) 362-8460	Alabama, Florida, Georgia, Kentucky, Mississippi, Tennessee
M. Knogendra Das, Coordinator Mr. Jeffrey B. Sheldon, Educational Specialist Mid-Atlantic (North) and Caribbean Regional Deaf-Blind Center c/o The New York Institute for the Education of the Blind 999 Pelham Parkway Bronx, New York 10469 . . . . (212) 547-1234	Delaware, New Jersey, New York, Pennsylvania, Puerto Rico, Virgin Islands
Dr. Edwin K. Hammer, Project Director Mr. Jack English, Coordinator Area Center for Services to Deaf-Blind Children c/o Callier Hearing and Speech Center 1966 Inwood Road Dallas, Texas 75235 . . . . (214) 634-8003	Arkansas, Iowa, Louisiana, Missouri, Oklahoma

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Mr. George Monk, Coordinator Mr. Michael Collins, Educational Consultant Midwest Regional Center for Services to Deaf-Blind Children 5th Floor, Davenport Building Ottawa and Capitol Lansing, Michigan 48933 . . . .(517) 373-0108	Illinois Indiana, Michigan, Minnesota, Ohio, Wisconsin
Dr. John Ogden, Coordinator Mr. William Smith, Educational Consultant Mountain-Plains Regional Center for Services to Deaf-Blind Children 165 Cook Street Suite 304 Denver, Colorado 80206 . . . . (303) 399-3070	Colorado, Kansas, Nebraska, New Mexico, North Dakota, South Dakota, Utah, Wyoming
Mr. John B. Sinclair, Coordinator Ms. Trudy Kaehler, Educational Consultant Mr. All B. Sanderson, Administrative Consultant Mr. W. Michael Minihane, Vocational and Educational Specialist New England Regional Center for Services to Deaf-Blind Children 175 North Beacon Street Watertown, Massachusetts 02172 . . . . . (617) 924-3434	Connecticut Maine Massachusetts New Hampshire Rhode Island Vermont
Mr. Dan Ludewick, Educational Specialist Northwest Regional Center for Deaf-Blind Children 3411 South Alaska Street Seattle, Washington 98118 . . . .(206) 464-6694	Alaska, Idaho, Montana, Oregon, Washington
Texas Education Agency c/o Special Education Division 201 East 11th Street Austin, Texas 78701 . . . .(512) 475-3507	Texas
National Center for Deaf-Blind Youths and Adults Mr. Louis Bettica, Director of Services 111 Middle Neck Road Sands Point, New York 11050 . . . .(516) 944-8900	

CURRICULA AND ONGOING ASSESSMENT FOR INDIVIDUALIZED PROGRAMMING IN THE CLASSROOM[1]

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University of Vermont
Burlington, Vermont

Most educational systems are similar in that they attempt to perform the same basic functions:

1. Screen and assess students to determine eligibility for services and/or type of services required;
2. Select instructional objectives and curricula appropriate for students based upon assessment;
3. Design and implement instructional programs appropriate to those objectives; and
4. Measure and evaluate the results of instructional programs as they are implemented, providing formative data for program modification and summative data for reporting to parents, administrators and others.

These general functions are a necessary part of all educational systems whether they are intended to teach reading, math, toileting, or head control. Effective educational systems for the severely and profoundly handicapped are in various stages of rudimentary development. Some programs for the severely and profoundly handicapped are able to organize an educational system that delivers quality programs and services to students and others are not.

In assessing this situation we determined that there is a need for efficient ways to organize an educational system for screening/assessment, objective/curriculum selection and measurement/evaluation for the severely and profoundly handicapped. One way might entail placing students in longitudinal skill sequences and monitoring their progress through those sequences. These sequences of skills can be the basis for screening, assessing, selecting instructional objectives, and evaluating the results of instructional programs.

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What is a Skill Sequence?

Skill sequences are hierarchies or progressions of behaviors which progress from zero skills to competent functioning in major developmental areas such as motor, communication, self-care, and socialization. Skill sequences can be designed to lead from zero, or almost zero skill level, in any developmental area to competent functioning. Similar to the mathematic concept of a number line, skills can be ordered along a continuum of increasing complexity. However, instead of being comprised of a chain of numbers, skill sequences are comprised of chains of skills. These skills can be converted into objectives for assessment, instruction and evaluation; just as a number line can be infinitely divided to find another skill or subskill. Placing each student within such a sequence of skills allows the formulation of a basic map of where we are and where we want to go. We believe that by mapping out where we were trying to go, we will be more likely to get there.

Developing effective and efficient skill sequences is not an easy task. Fortunately, most of us are in programs where we don't have to do the whole job, and we may use, adapt or refine available skill sequences. Depending upon your program, you may be looking at different sections of this zero skill to competency performance sequence. For severely handicapped students, we're generally working with the skills that you might expect to see in very young children; in most cases, birth to twenty-four or thirty-six months.

Why Use Skill Sequences?

We feel there are substantial advantages to using skill sequences. Some of these advantages are listed below:

1. Skill sequences provide a meaningful and functional way of identifying students. We believe that as educators we are in the business of building skills. This is especially true for educators of severely handicapped students. The focus of our identification and description of students should be based upon the presence or absence of specific skills, not hypothetical constructs or general labels such as autistic, profoundly retarded or severely handicapped. Skill sequences allow us to define our population and group students for programs in terms of skills. An educational system which has a continuum of services may place students along the continuum on the basis of skills and chronological age. Skill sequences can help us define what skills are being taught in each component program of a continuum of services so we can determine the program's entry and exit levels.

2. The use of skill sequences eliminates the need for a concept of "readiness." The teacher never waits for a student to be ready to learn a given skill, but begins to teach the requisite skills. Every student can be placed at some point along the skill sequence, and is ready to learn the next skill. We always have something to

teach because our skill sequences progress from zero skills up to competent functioning. This allows us to answer a lot of arguments from people saying, "Well, I don't really think the student is ready to do this, that or the other," or "I think you should wait." In a skill sequence approach you define and teach requisite skills, instead of waiting.

3. Use of skill sequences facilitates the individualization of instruction. Instructional programs are individually tailored to each student based upon his or her placement within the skill sequences. Students are then allowed to progress through these sequences based upon their individual rates of achievement.

4. The use of skill sequences facilitates communication about and coordination of assessment, the selection of instructional objectives, and evaluation. These functions can be viewed as separate uses of one common skill sequence. Instead of using one system for screening, another for determining instructional objectives and a third for program evaluation, these particular functions can be tied together into a well-integrated and coordinated system. That is, determining students' functioning levels in a skill sequence screens those in need of services, delineates instructional objectives, and evaluates the effectiveness of a program based upon students' progress through the sequence.

5. The use of skill sequences helps to minimize the deleterious effects of student transfers to other classrooms and personnel turnover. Programs based upon long-term skill sequences have a continuity independent of the people who are currently involved as instructors or administrators. Teachers receiving students or replacing other teachers know exactly where the student was and where their instruction should begin. In addition, the use of long-term skill sequences gives the program stability and direction, and it is not necessary for teachers to haphazardly pick skills for instruction based upon some prevailing fad or hasty decisions made the night before.

6. The use of skill sequences can facilitate the development of more efficient curricula. That is, if instructors monitor student performance, they can obtain data which indicates the order in which skills are most readily acquired and which skills must be broken into finer sequences of component skills. A cycle of constructing the skill sequence, monitoring student performance ...should lead to more efficient and valid curricula. It is only through such efforts that we can progress from "normal" developmental sequences, logically derived notions of sequences and laboratory research to empirically valid curricula (Williams, Cohen and York, in press).

Are There Different Kinds of Skill Sequences?

As we have examined skill sequences currently within the literature, we have found two major bases for the construction of these sequences. The first might be entitled, "Skill Sequences Based upon Normal Development." In this model, skill sequences are constructed based upon what the normal child is presumed to learn in what sequence as he or she develops. Such a sequence is considered to be relatively invariant among children as they grow up, and is thought to be a universal constant underlying a child's development. The second might be entitled, "Skill Sequences Based upon the Logical Analysis of the Living Environment or the Analysis of Required Functions." In this model, skill sequences are derived from the skills individuals must be able to perform to function in selected environments such as group homes, vocational placements and recreational sites. After delineating the basic skills required by selected environments, these skills are broken down into component skills which are ordered from simple to complex into an instructional sequence. Such an approach is commonly called task analysis. In this case the task to be analyzed is the ability to function within selected environments.

What are the Advantages and Disadvantages of Sequences Based Upon "Normal" Development?

Advantages:

1. People can understand a developmental basis and it is easy to explain. If someone asked, "What are you basing your curriculum on?" you can say, "We're basing it on normal development." Most people have some knowledge of normal child development and a familiarity with the general sequence of skills and the order in which they occur. At a minimum, other people can understand the basis of your sequences and you can understand it.

2. There is a theoretical base for the sequence. You aren't just picking a sequence out of the air, but have theories which provide a rationale for the sequence.

3. There is extensive literature available on normal child development, and this literature has been broken down both in terms of the sequence in which skills develop, and into major skill areas such as language, motor, and so on. You don't have to sit down and logically derive all of the skills from scratch. At least, with normal child development, you have a sequence to start from. You may then develop instructional programs for steps in the sequence and determine if students progress through these "normal" steps, and thus, determine if these steps are valid.

4. Normal developmental sequences begin at nearly zero skill level. Children are born with basic skills which are helpful in terms of survival and getting them started toward further learning. However, that repertoire is not very sophisticated. So normal

development starts very low and has been delineated up to adult functioning.

5. A student's failure to progress through a "normal" developmental sequence may serve to diagnose sensory and motor impairments (Williams, and Fox, 1977).

6. Finally, many of you work in an interdisciplinary setting. This if often the only model that puts enough expertise together to develop comprehensive programs for the severely handicapped. Many members of these teams use normal development as the basis for developing programs for handicapped students. Generally, the normal developmental model is the dominant model among disciplines such as physical therapy, speech therapy, medicine and occupational therapy. Use of skill sequences based upon normal development may provide a compatible framework for professionals as they work together.

Disadvantages:

1. The appropriateness of sequences based upon normal development for severely handicapped students is often questioned. Obviously, the students we are discussing do not constitute a "normal" population. Most of them have been referred to us precisely because their development has not been "normal". They may have been out of their natural homes for years, without schooling and often manifest significant sensory and/or motor impairments. To expect these pupils to progress through a "normal" developmental sequence may be inappropriate and it is possible that the application of objectives based upon "normal" development is also inappropriate.

2. Normal development does not represent a teaching sequence. We need to know how to get a pupil to develop skills, not necessarily how those skills normally develop. Something has already gone wrong with normal development, we now need a way to sequentially teach the skills that have not yet been acquired. In some cases, the effective training sequence and the normal developmental sequence may not be the same. The crucial question for teachers may be, "How do you teach this skill?", not just "How does it normally develop?".

3. Basing skill sequences upon normal development does not provide for instruction on functional alternatives. In normal developmental sequences, walking is considered to be an objective in and of itself. To say that a normal child develops some skill does not necessarily relate to the more important question, "What is the function of that behavior?". For instance, the function of walkir , is to transport one's body through space. If we translate objectives based on normal development into their function, we are able to find alternatives which will work equally well for some students. For example, a wheelchair may be substituted for

walking. Once we deviate from the normal objective, normal developmental sequences are not much help in determining a skill sequence for the objective.

4. Sequences based upon "normal" development may ignore functional applications of the skills they are attempting to develop. Such a sequence may fail to consider the requirements placed upon an individual to function in a particular environment or the age appropriateness of tasks.

What are the Advantages and Disadvantages of Sequences Based Upon Analysis of the Living Environment?

Advantages:

1. People can understand the analysis of living environments as a basis for developing skill sequences.

2. Construction of skill sequences following this basis is straightforward and pragmatic. The task to be performed is delineated and broken down into component skills.

3. Analysis of the living environment ensures that sequences are directly based upon the competencies required by individuals to function within a given setting or community. There is little chance of teaching skills which will not be directly relevant to an individual. Priorities can be determined and assigned to the skills found most essential to competent functioning. This represents an approach to delineating precisely what is necessary for survival and attempting to teach those skills.

4. Skill sequences based upon the analysis of the living environment are anchored at the upper end to some required and functional skill. The objectives of programs employing such sequences are clearly defined and have high validity. This facilitates the direct measurement of program effectiveness. Since these sequences are comprised of objectives directly related to those functional skills, program outcome can rapidly be reduced to strong accountability statements.

5. Since sequences based upon the analysis of a living environment are directly related to the functions an individual must perform, they are readily translated into functional alternatives. Use of a wheelchair to attain the transfer of one's body through space can be considered to be equivalent to walking if it fulfills the same function.

6. Sequences based upon the analysis of the learning environment make no assumptions about the students. It is strictly a matter of moving students from their current skill level to being able to function in some environment.

Disadvantages:

1. Sequences of skills necessary for function within a given environment may be unavailable. An instructor may be required to develop a sequence from scratch.

2. Logical analysis does not represent a teaching sequence. While it may clearly delineate the terminal object, the armchair anaylsis of the component skills may leave much to be desired. This appears to be particularly true of logical analysis extending downward to rudimentary skills, such as the motor and breathing components of speech.

3. A logical analysis may have to be individualized for each community or each living environment which is being analyzed. While this may be a substantial advantage in ensuring an individual's adjustment to any one environment, it may in fact inhibit generalization across environments. Applications of this approach may not take into account the range of living environments a student may experience. Thus, it is possible to envision a student training to function in one environment and failing in a slightly different environment.

4. Sequences based upon logical analysis may be at odds with sequences used by the staff with whom you must work. This may be a serious problem if you work within an interdisciplinary model and other members of that team base their sequences upon "normal" development.

What Kind of Skill Sequence is Best?

As with many things in education there doesn't seem to be a general answer to this question. The obvious answer is the skill sequence that works. While this is the kind of answer you might expect from an eleven year old, it's also the ultimate answer. Ideally, we should only use skill sequences that have been applied to the instruction of students and have been empirically validated as effective. Unfortunately, we don't yet have many such sequences of the decision rules to determine whether and when to apply them to a given student. So we must make do with approximations.

What Kind of Skill Sequences Should Be Used as Approximations or What Kind of Skill Sequence Do We Use?

We use a system of skill sequences called Minimum Objectives (MOs). As used here, minimum objectives encompass the minimum skills pupils should possess to function age-appropriately in their current and potential future life spaces. These skill sequences progress from zero skills to competent functioning and may serve as an educational program planning tool and as a basic metric for assessing pupil progress in a program of intensive special education. The basic framework for the system is the delineation of sequences of skills which lead from zero skills to competent functioning in the major

developmental areas of motor, communication, self-care. and socialization.

In developing the minimum objective system we reviewed literature on child development and ascertained what skills a typical five and six year old performs. Next, we determined which of these skills might be considered to be minimum skills. Finally, we delineated sequences of steps that lead from no ability to competent performance of those minimum skills. To accomplish this, we reviewed developmental literature to abstract out normal developmental sequences. In addition, we reviewed the training literature and abstracted out empirically verified training sequences.

We have attempted to design the minimum objective system to account for several of the major disadvantages to the use of sequences that are largely developmentally based.

1. We have attempted to anchor the sequence to minimum skills pupils should possess to function age-appropriately in their current and potential future life spaces. Thus, we selected and eliminated certain skills that occur in normal development based upon functionality. For example, functionality of the motor behavior of skipping could not be documented and the skill was deleted from the system. We designed our sequences to build toward the application of skills in tasks of daily living, not just developing isolated skills.

2. We have tried to present our skill sequence as a framework to be modified based upon student performance. Thus, we hope to evolve an empirically verified sequence.

3. We have tried to develop a framework within the sequence that recognizes and promotes the selection of functional alternatives, when appropriate. This framework concentrates upon the functions that a student must perform as well as the behavior typically employed to accomplish that function (e.g., walking: move body through space). A sample matrix is presented in Figure 1.

Figure 1

Sample Matrix

For Functional Alternatives

L.R. = Least Restrictive
M.R. = Most Restrictive

Behavior	Function	L.R.-----------------------> M.R. Independent Functional Alternatives			Dependent Alternatives	
Walking	Move body through space	Cane	Walker	Wheelchair unassisted	Wheelchair assisted	Carry Student
Speak in sentences	Communication	Communication Board	Sign Language	Grunts Gestures Facial expressions		
Pincer grasp	Manipulates small objects		Objects with special handles		Manipulate objects for pupil	
Tying shoes	Put shoes on snuggly	Loafers			Tie shoes for pupil	

In the matrix depicted in Figure 1, the behaviors gleaned from a normal developmental sequence are listed in the first column. The second column attempts to describe the function of each behavior. The description of the function is the vehicle for translating the behavior into functional alternatives. Independent functional alternatives are alternatives a pupil may use to perform the same function unassisted or independently. The alternatives within each row are listed left to right - least restrictuve (L.R.) to most restrictive (M.R.). Dependent alternatives do not involve teaching the pupil to perform a skill which fulfills some function. They involve structuring the environment such that a caregiver or mechanical device performs the function for the pupil. For example, while teaching a two month old infant the enabling skills for walking, we carry the infant around. We provide the function of locomotion for the infant until the infant can perform the function him/herself. Programming involves transfer of the performance of selected functions from caregivers or mechanical devices to the pupil. When

appropriate dependent alternatives are provided, there are zero prerequisites for an individual functioning in specified life spaces.

How Are Functional Alternatives Selected?

We need guidelines or rules for selecting functional alternatives. Selection of alternatives from a matrix may be guided by the principle of normalization and the principle of functionality. The principle of normalization involves: a) teaching individuals within the limits of their abilities so that their behaviors approach those of their normal age-mates; b) highlighting individuals' similarities and playing down differences; and c) providing individuals with the ability to function effectively in normal environments. The principle of functionality involves: a) teaching individuals skills they may use to operate on their environment; b) teaching alternative skills that substitute as completely as possible for the "normal" skill; and c) teaching alternative skills that allow independent functioning in the "normal" environment.

Combining these two principles yields the following guidelines for selecting functional alternatives:

1. The alternative should substitute as completely as possible for the "normal" skill;
2. The alternative should be as age-appropriate as possible;
3. The alternative should make the pupil as similar to "normal" as possible; and
4. The alternative should allow the pupil to operate as independently as possible in his/her environment and the "normal" environment.

Let's say we choose walking as our target skill. Generally, we should always pick the behavior indicated by normal development for carrying out a function. By definition, it will be the most normal and appropriate to his chronological age (CA) and generally the least restrictive and most functional. However, if it is determined that the pupil does not currently have the requisite skills to walk, an alternative must be chosen which is the most functional, normal, CA appropriate and least restrictive.

Choosing an alternative does not rule out efforts to teach the more normal skill. For example, an alternative such as a wheelchair may be used while a pupil is being taught to walk. For another example, if speaking is our target skill, and a pupil cannot speak, we must choose a functional alternative which serves the function of communicating. Again, we must search for the most functional, normal, CA appropriate, and least restrictive alternative. As we look at alternatives we may find advantages and disadvantages for each functional alternative. A communication board may be chosen over manual sign language because a less limited audience may understand the communication. However, a communication board may limit what can be communicated in terms of the amount of information that can

be displayed, the speed of transmission, and the necessity for the board for communication. We could select several alternatives, such as communicating through facial expression, grunts, cries, and sighs to be used while the individual is learning to use a communication board or to speak.

It must be emphasized that our intent is not to derive matrices of functional alternatives and then fit the pupil to an existing alternative according to the pupil's sensory impairments, motor impairments, chronological age, and existing skills. Such an approach would imply that when a pupil does not quite fit a functional alternative, the pupil is not provided a program. Instead, we should devise and adapt functional alternatives to fit pupils.

What is being proposed is that skill sequences, derived substantially from normal development, be used as the basis for planning and evaluating pupils' programs. If the behaviors delineated by the basic skill sequences are not appropriate for some pupils with sensory and motor impairments, behaviors in those sequences may be translated into functions they perform and then the most functional, normal, CA appropriate, and least restrictive alternative may be selected.

The minimum objective system basically consists of a checklist of skills which may be used as the assessment record sheet. In a manual that accompanies the checklist, each skill on the list is written in the form of a behavioral objective with conditions under which the behavior should occur and criteria. Figure 2 depicts a modified assessment sheet. In the first column the skills in the sequence are listed. Each skill may be checked off as having been mastered (the student performs the skill across people, places, tasks and time) or acquired (the pupil performs the skill but only in specific situations). If the student has not acquired the skill, we assess whether the pupil will perform the skill if given verbal prompts, gestural prompts, models, partial physical assistance or full physical assistance. If it has been determined that the student should use a functional alternative, the evaluator describes the alternative and assesses the students on the alternative. This system allows us to evaluate students on the basis of functions they should be able to perform and allows flexibility in how the function is carried out.

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Figure 2

Modified MO Assessment Record Sheet

Skills	Mastered	Acquired	Verbal Prompt	Gestural Prompt	Model	Partial Assistance	Full Assistance	Functional Alternative Describe	Mastery	Acquired	Verbal Prompt	Gestural Prompt	Model	Partial Assistance	Full Assistance

This model delineates two basic components of a pupil's educational program. The first component systematically teaches the pupil to perform functions him/herself in the most functional, normal, CA appropriate, and least restrictive manner possible. The second component insures that the environment is programmed to perform functions for a pupil which a pupil cannot, as of yet, perform.

How Do Skill Sequences Relate to Ongoing Assessment.

For a program employing a skill sequence approach, assessment involves determining what skills a pupil possesses in relation to a sequence of skills, and if his/her skill level is appropriate for his/her chronological age. If a discrepancy is found between a pupil's current skill level and that of his/her age-mates, instructional interventions are undertaken to eliminate or reduce that discrepancy. Finally, the pupil's progress within the skill sequence is measured to provide both formative and summative evaluations of program effectiveness.

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What is Formative Evaluation?

Formative evaluations assess the pupil's short-term progress, such as daily and/or weekly progress toward acquisition of objectives in a skill sequence. Formative evaluation may be used to make daily assessments as to whether an educational program is effective, that is, to assess if, on a daily basis, the pupil is acquiring specified skills. We might devise a separate data collection system for each objective. For example, the number of minutes the student sits unsupported can be sampled, the number of tries or trials the pupil uses thumb in opposition with finger grasp can be counted, and the number of trials the pupil puts the objects in and out on verbal cue can be determined. Each day the data from each instructional session can be summed and recorded. If the formative assessment data indicates that a pupil is making adequate progress, the program may be continued as designed. If the assessment data indicates that the pupil has acquired or mastered an objective, the pupil may progress to the next objective in the sequence.

We believe that formative evaluation should take place within a data-based instructional program. If a test-teach instructional design is used, the pupil's daily performance within educational programs serves to quickly correct any initial assessment errors. Thus, the data-based educational program provides continuous assessment. In a test-teach instructional design, each day the teacher first tests the objective of concern and only teaches if the pupil errs. For example, if the objective is hand washing, the teacher presents the cue to respond and only teaches if the pupil fails to wash his/her hands correctly.

What is Summative Evaluation?

Summative evaluations summarize a pupil's acquisition of specified objectives from a skill sequence through a specified point in time. For example, we may evaluate and summarize the objectives pupils have acquired before educational intervention, such as at the beginning of a school year. At the end of the school year, we may again summarize the objectives a pupil has acquired. We may then compare the initial summative evaluation with the later summative evaluation to document or assess student progress through a skill sequence.

Why Do We Need Assessment in the Form of Formative and Summative Evaluation?

Educational programs for students receiving special educational services will all be required to conform to standards set forth in the Education for All Handicapped Children Act, Public Law 94-142. This law mandates the development of a written Individualized Educational Plan (IEP) for every handicapped student. The following eight statements describe the required content of each IEP and the strong evaluation component that is necessary.

1. Statement of pupil's present level of educational performance.

2. Statement of annual goals.

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3. Statement of short-term instructional objectives with projected time-lines.

4. Statement of specific educational services to be provided, why these services are the most appropriate, when they are to be provided, who is to provide them, and the specific intervention strategies to be implemented.

5. Statement specifying extent to which the pupil will be able to participate in regular program.

6. Specification of projected date for initiation of services and anticipated duration of services.

7. Statement of objective criteria and evaluation procedures to determine whether instructional objectives are being achieved.

8. End of year summative evaluation of services provided to the pupil.

How Are Ongoing Assessment and Skill Sequences Used in the Individualized Educational Plan?

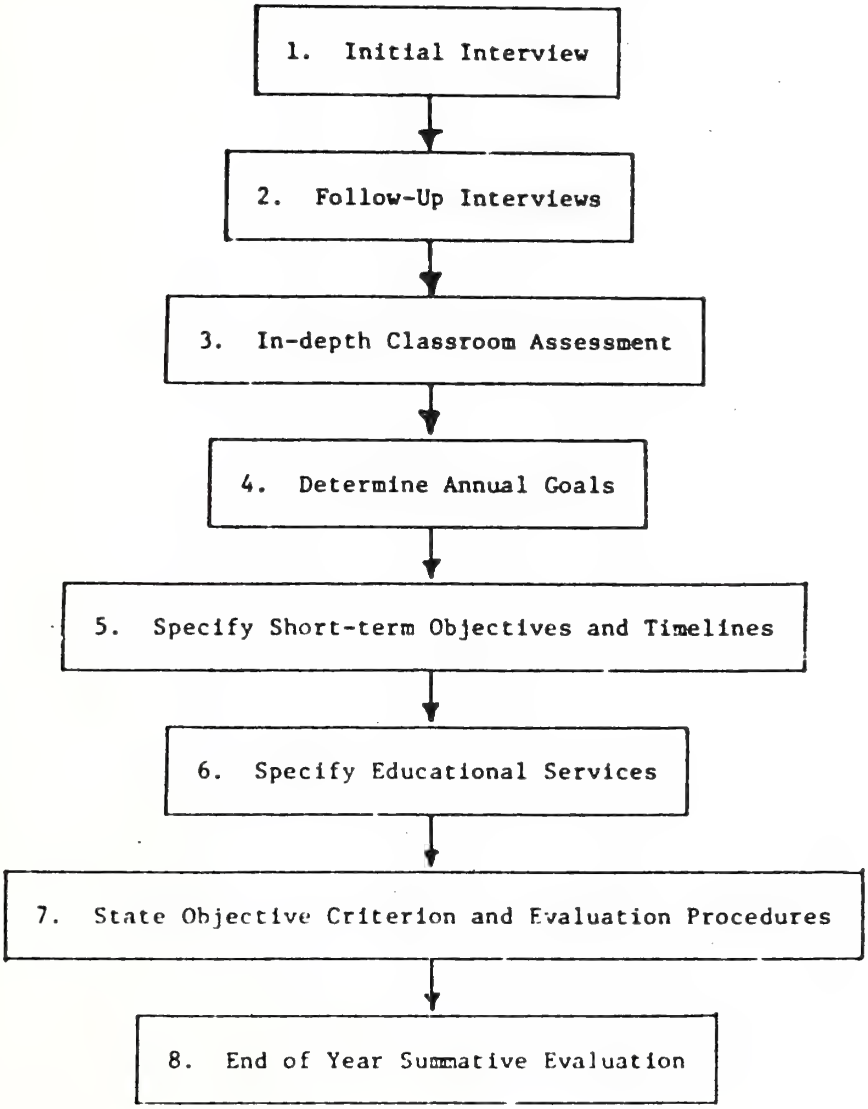
Data should be collected during the first few weeks of instruction concerning a pupil's functioning level within a skill sequence. These data may be summarized to complete the assessment of the pupil's initial level of performance. Further reference to the skill sequence will allow the selection of annual goals and short-term objectives with projected timelines for achievement. To complete a quarterly or end of the year summative evaluation, summarize the pupil's performance by checking off objectives a pupil has acquired in his/her progress through the skill sequence. Thus, a skill sequence can be used as a valuable planning document in the preparation of Individualized Educational Plans.

How Do I Develop an Individualized Educational Program Plan?

Figure 3 depicts an overview of the steps which may be followed in developing an Individualized Educational Program Plan (IEP) (Williams and Fox, 1977). The steps describe how to develop an IEP for pupils who are new to a program. To develop an IEP for pupils already in an educational program, the interview step may be modified and when appropriate deleted.

Figure 3

Developing An Individualized Educational Program Plan


1. Initial Interview
2. Follow-Up Interviews
3. In-depth Classroom Assessment
4. Determine Annual Goals
5. Specify Short-term Objectives and Timelines
6. Specify Educational Services
7. State Objective Criterion and Evaluation Procedures
8. End of Year Summative Evaluation

Initial Interview and Follow-up Interviews

The first step (Box 1) in developing an IEP is determining the eligibility of a pupil for special education. The initial interview may be the first contact made between education, the potential pupil, and the pupil's parents or parent representatives. During the initial interview the legal rights of the pupil in regard to obtaining an appropriate free public education should be explained, and eligibility determined. Specific areas requiring interdisciplinary expertise for assessment or developing the pupil's educational plan should be noted.

The educator should review the data obtained through the initial interview before conducting follow-up interviews (Box 2) and performing further assessments. Data from the initial interview should help determine which objectives in a skill sequence system should be given priority in assessment in selected areas, such as motor or communication. Follow-up interviews may be conducted with a person who has in-depth knowledge of the pupil, such as a parent, parent representative, or teacher. During the course of the interview, the person with in-depth knowledge of the pupil should informally (in the course of pleasant conversation) be asked questions which pertain to the pupil's performance level on objectives within the skill sequence system. The interviewee may also be asked to elicit selected responses from the pupil. This procedure for initial assessment may provide more accurate and complete information on a pupil's skills than may be obtained through having a person unacquainted with the pupil perform a complete assessment. In addition, an initial assessment through follow-up interviews immediately involves parents or parent representatives in the development of their child's educational program. The assessment provides an opportunity for parent and educator to discuss appropriate educational objectives for the pupil and to develop a vehicle to facilitate continuity between home and school on pupil progress.

In-depth Classroom Assessment

After the in-depth assessment interviews with the parent or parent representative, the educator should perform further in-depth assessment within the educational program. Continuous in-depth assessment is accomplished once a pupil is in a data-based educational program.

After the interview, in-depth classroom assessment (Box 3) can begin on objectives indicated by the interview. Appropriate expertise may again be called upon to help design and evaluate the in-depth classroom assessmen As described previously, once the pupil is in data-based instructional programs, the formative data collected during the first three to four weeks of programming may be summarized to complete the initial summative assessment. This data may be attached to a pupil's individualized program plan to describe the pupil's initial performance level.

Determining Annual Goals

After the in-depth assessment is completed and summarized, the next

step is to use this data to determine realistic annual goals for pupils (Box 4). There may be many objectives a pupil should be taught but there is a very limited time period. List the objectives a pupil should be taught and then prioritize them. Select the objectives given highest priority as your annual goals.

Not all goals will necessarily be achieved at the end of the school year. Some may be achieved in a month, three months, five months, and so on. Let's say we have selected two motor objectives and two communication objectives - two to be achieved by December and two by May. The first three to four weeks of educational programming, upon which we based our initial summative evaluation, should have provided us with information on what realistic timelines might be for individual pupils. The objectives should first be listed in the order we expect a pupil to acquire them.

Objectives	Target Date	Actual Date
2.0 Communication-discriminates between four common toys (ball, block, pegs, doll) by indicating which one she/he wants	May	
2.0 Motor-sits on floor using arms/hands to maintain balance	May	
1.0 Communication-interacts with four common toys (ball, block, pegs, doll)	December	
1.0 Motor-masters rolling over	December	

Specifying Short-term Objectives and Timelines

When the goals have been determined, the next step is to state short-term instructional objectives with projected timelines for achievement (Box 5). The skill sequence should provide the short-term objectives. Again, we list the goals in the order in which we expect the pupil to obtain them. We then specify a skill sequence for teaching the objective which leads from the pupil's current performance level to acquisition of the objective. Next, we project a date by which each step of the training should be acquired.

Objectives	Target Date	Actual Date
2.0 Communication-Discriminate between four common toys (ball, block, pegs, doll) by indicating which one s/he wants	May	

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Objectives	Target Date	Actual Date
2.0 Communication		
2.5 Given a choice between ball, block, pegs, dolls and non-preferred objects and asked "What do you Want?" s/he points to ball, block, pegs, doll	May	
2.4 Points to doll when asked "What do you want?" and given a choice between a doll and a non-preferred object	April	
2.3 Points to peg when asked "What do you want?" and given a choice between pegs and a non-preferred object	March	
2.2 Points to block when asked "What do you want?" and is given a choice between a block and a non-preferred object	February	
2.1 Points to ball when asked "What do you you want?" and is given a choice between a ball and a non-preferred object	January	
1.0 Communication-Interacts with four common toys (ball, blocks, pegs, doll)	December	
1.4 Self-initiates play with doll	December	
1.3 Self-initiates play with pegs	December	
1.2 Self-initiates play with blocks	November	
1.1 Self-initiates play with ball	October	
2.0 Motor-Sits on floor using arms/hands to maintain balance		
2.5 Remains in position until task (such as feeding) is completed	May	
2.4 Remains in position 10 minutes	March	
2.3 Remains in position 5 minutes	February	
2.2 Remains in position 3 minutes	February	
2.1 Remains in position 1 minute	January	

Objective	Target Date	Actual Date
1.0 Motor-Masters rolling over	December	
1.6 Rolls from stomach to back	December	
1.5 Rolls from stomach to side	November	
1.4 Rolls from side to back	November	
1.3 Rolls from back to stomach	October	
1.2 Rolls from back to side	October	
1.1 Rolls from side to stomach	September	

The short-term objectives may be depicted on timelines as in Figures 4 and 5.

Figure 4

Placing Objectives on a Rate Line

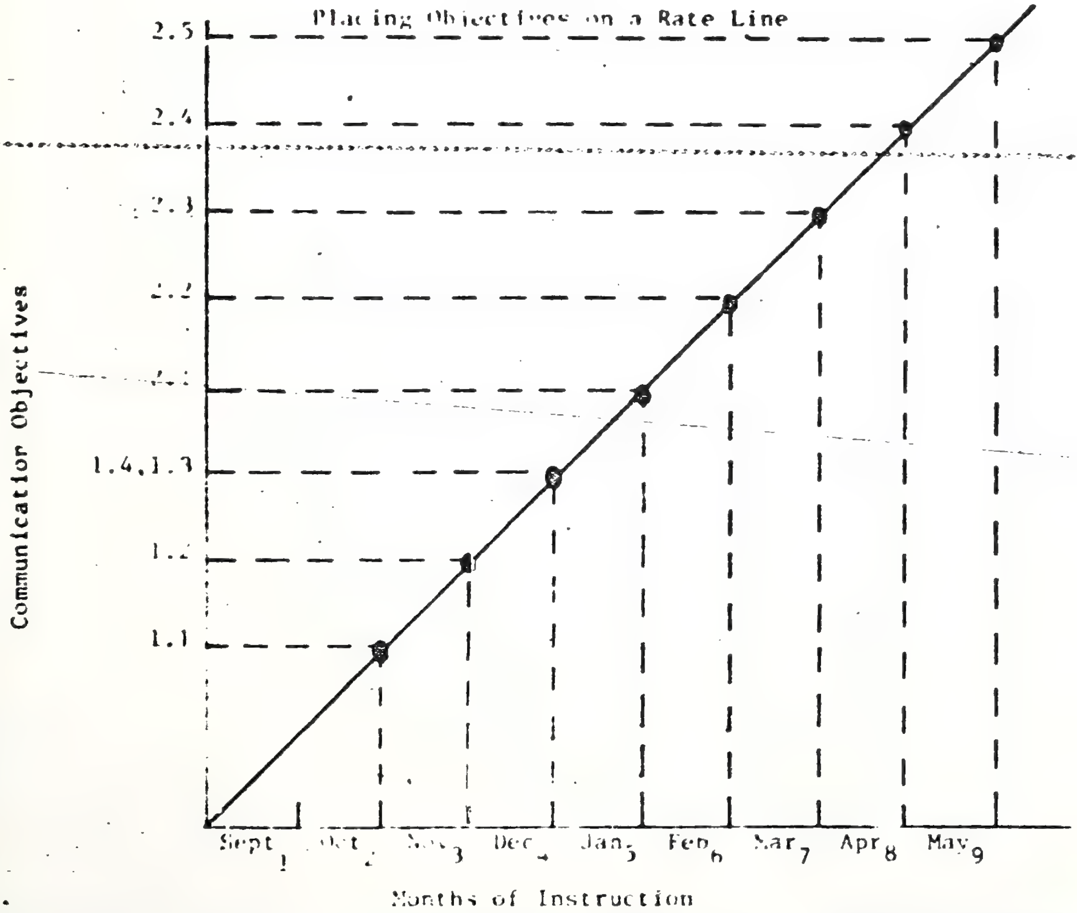

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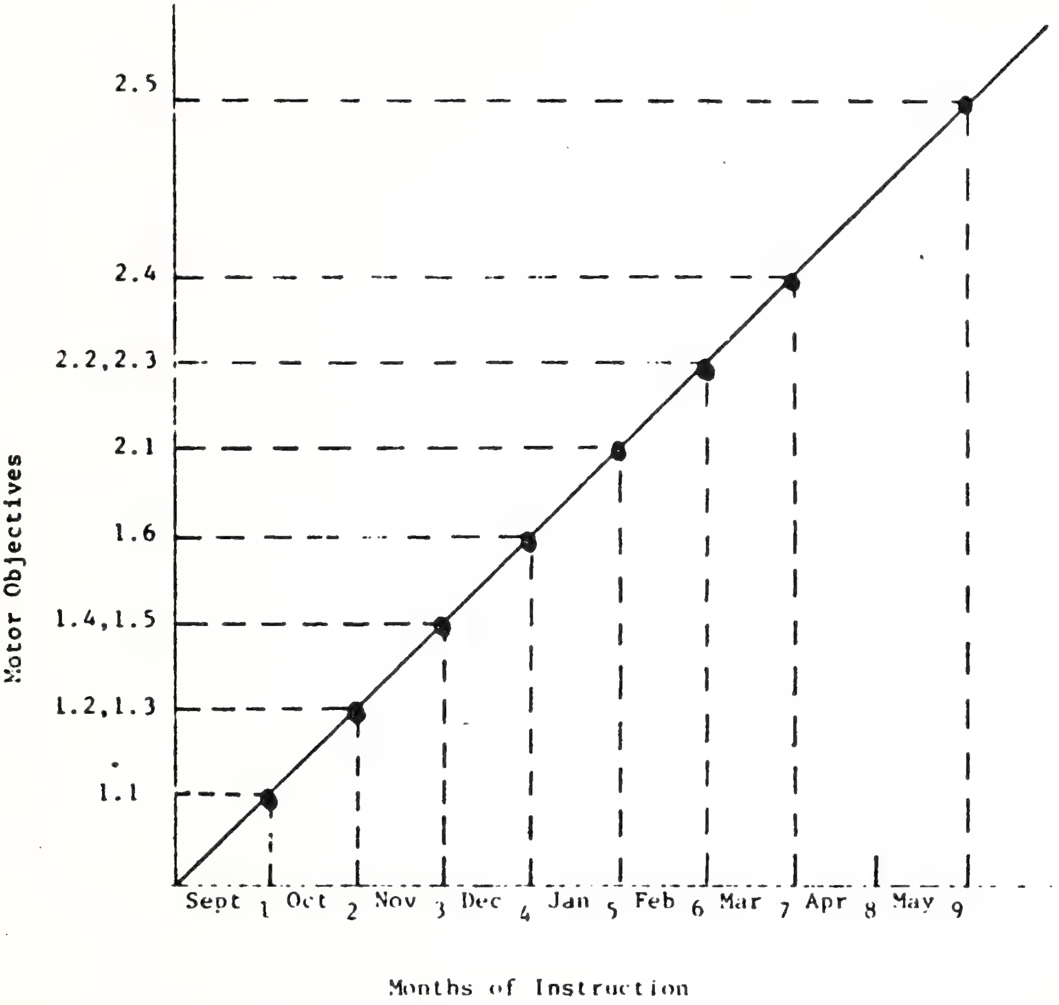
Figure 5

Placing Objectives on a Rate Line



Specifying Educational Services (Refer to Figure 3)

The next step (Box 6) is for the educator to specify in the pupil's educational plan what educational services must be provided by whom for how long to achieve the annual and short-term objectives. The lists or timelines of annual goals and short-term objectives may now be attached to the pupil's IEP.

Formative (daily) assessment may be used to determine if the timelines are being met and if program modifications are needed (Box 7). End of the year summative evaluations (Box 8) may simply involve presenting data which indicates which annual and short-term goals have been achieved.

In this model, a skill sequence system serves as the basis for assessment and program planning. Pupil progression through the skill sequence may be used as the basis for formative evaluation and the formative evaluation serves as the basis of summative evaluations.

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HUMANIZING THE ENVIRONMENT - PEOPLE, PROGRAMS AND PLACES

Ms. Elaine Ostroff
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Boston, Massachusetts

Ms. Nancy Ann Casey
Special Needs Coordinator
Long Meadow, Massachusetts

Welcome to the Humanizing the Environment Workshop. On the poster is the overview of how we're going to spend our time together. We'll be introducing ourselves, Nancy and I. Then people will be introducing each other. I'll provide a rationale for designing environments and will show some slides. Nancy will continue with slides of more elaborate teacher-built environments. We'll spend some time on design process and also briefly describe some environmental strategies we've used in Massachusetts to support teachers and parents in their work.

Nancy and I have tried to organize a mini course to share our experiences with you. I've also prepared a packet, "A Primer on Design" which you can get during the break, for those of you who want more information and resources.

I'm pleased to present to you the work of an environmental design facilitator. This work evolved during a three year period with the Massachusetts Department of Mental Health. It grew out of the needs I saw in my job as a central office staff person visiting classrooms. I was stunned at the quality of energy and the commitment made by teachers who were working with young and older mentally retarded children. People with good programs were working under really awkward physical circumstances in badly organized spaces. Everybody was in the wrong kind of place; there was no ideal setting. Everyone was either in a church basement or a room designed for something else. The confusing environments they were in were hindering the program and sometimes creating problems with the children.

What I had the good fortune to know was that there were small changes that were possible; that one didn't have to wait for the architect or the designer or the purchase order that never came to make your program better. When I picked up this pressing need I was able to work with teachers, to help them with some simple environmental modifications. As we worked together it became more and more apparent how this effected a child's life and the teacher's life.

I was primarily working with teachers of preschool programs, the community clinical nursery shcools, and the children in those programs were your average young retarded child. As our program went on, more and more

parents were aware of services and we were finding equally young but severely handicapped young children with multiple handicaps. The classrooms that weren't working well for the average child were less functional for the severely handicapped kids, and we had to find ways of making those environments more responsive. So, that was how I really started doing this work. My background in theater and creating settings for peoples' interactions, as well as my liaisons with architects and designers helped pull together a process I'll share with you today.

I'm Elaine Ostroff and I'm currently directing a manpower training program for the Department of Mental Health. It's a one year graduate program and I'm training teams of people to work in developing the kinds of transitional services that are going to bring some of our severely handicapped kids into the mainstream of our public schools and communities. Environmental design is a big part of that program. It's funded by the Massachusetts Department of Mental Health. And this is Nancy Casey. Nancy is currently the special needs coordinator for a collaborative, one of those regional groupings of communities that's been talked about. Maybe she could say a little about that.

Nancy: Elaine and I had a similar background in theater. I was one of Elaine's students in the first year of the training project, through the Department of Mental Health, and went on to do my practicum work at Monson State Hospital in Palmer, Massachusetts. The following year I went to work on a transition program for kids who were severely and profoundly retarded but who were not cute little kids. They were older kids who had never received any services. In collaboration with a person from my graduate program team, Bob Arbib, we developed the creative learning lab, which you will see and hear about later. Now I'm with a collaborative to develop programs and to work with spaces in public school settings.

Elaine: I'd like to have a map of all the nice places that we have been sharing. I'll say what's very obvious--the kind of place you want for yourself is the kind of place we want for the kids we're working with. How we make that happen is a long, slow process, but it's that kind of connection we need to be aware of. And the thing that I'm most struck with in my work, what I saw happening and what I really want to try to help change, is the fact that a lot of people in their work somehow are not able to bring their humanness to the classroom. Somehow what they know in their own life and what they believe to be true and what they act on in their own life, somehow is very hard to incorporate in work. Somehow there are two standards. I was struck in observing classroom teachers that the classroom teachers who would not for a moment put up with situations in their own homes, they accepted as a given in the classroom. I suggest that that's really a conditioning process that we've all been subjected to; that somehow the environment is a given. It exists because somebody of great knowledge or power made it that way and that we don't have any power to change it. In our own homes we have those options, we have those responsibilities, but somehow in a school setting or in an office setting or some kind of public place, we've been conditioned to believe that we don't have the power to change it. Or, if you do change

the setting, it's not quite clear how much you can do without someone saying, "Who did that?" There seem to be all these taboos about changing settings.

Now on to the rationale for work with the physical environment.

1. First and foremost is that people really are affected by the environment, vulnerable children much more so than other people. Anyone can be vulnerable, as when I was on crutches. I was lucky that it was temporary, but I realized what kind of limitations there are in the physical setting. When people are in stress, when people are physically disabled, all the conditions that exist around us all the time effect us powerfully and we are less able to interact effectively with it. The environment is always there; not to use it is to abdicate. It's a resource that is there and whether we do anything with it or not, it's doing something. So there is a real need to take that setting and do something with it so that it's working to achieve the kind of goals that we want. Because if we don't, it will undermine our goals. In the classrooms that I'm most familiar with, we talked about promoting initiative and independence. Yet we had environments that really thwarted that totally. For example, let's consider the decision-making involved with selecting a game. The organization of materials is extremely important. Just the way something is put on a shelf should be considered. This can allow a child to make a decision between this piece of equipment and that piece of equipment. The mobility of the student is also important. If they can't stand up or walk, how can materials be reached? Many teacher tasks requiring incredible energy ("No, no, not that one, no, no, no-- let me, oh, you dropped it.") are problems that could be environmentally solved leaving the teacher's energy for the real kind of human things that have to go on.

2. Immediate reinforcement. Another issue is that teaching, the kinds of changes we want to have happen, the kinds of changes that we heard about this morning, this new legislation, these new programs, all of this great life is always out there, far away. A person who every day is dealing with kids needs to know that something can be done right now to make a difference in the daily life of the classroom. It doesn't matter that a task force is going to come out and look at it, it doesn't matter that a resource center is going to have a terrific library that we can go to. What's going to matter are immediate changes we can make in a classroom to make the teacher's work possible, to make something different in the lives of the kids. That's how I began, making small kinds of changes; even if it meant cleaning out a storage closet so that the teacher could get to the materials that she wanted to have. Somehow those little things make a difference in the daily life of the classroom. The relocating of a coat storage to a portion of the room near the door can make a difference in the whole entry procedures at the beginning of the day. It is important to make changes that matter immediately.

3. Team problem solving. By bringing the significant people who have an influence on that child's life together you can work on the planning of some kind of design solution to a problem (e.g., How are we going to

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fix this classroom? How are we going to build this playground?). We start talking about needs and we are able to hear everyone's perspectives and can put this information together to solve the original problem, whether that problem was designing space that will allow a child to sit in a certain position or engage in socializing experiences. It's an integrating procedure for the whole team.

4. Whole setting assessment. A fourth process that I'd like to discuss is called behavioral mapping. A lot of us do assessment and reporting. The use of a behavioral map allows us to put behaviors in a physical context and to get data about a kid in a whole setting so that we don't just see isolated behaviors. We can see the context, the physical setting, where it happened, what it was, who else was there. With that kind of data we're able to have insights which give us a much broader picture. Behavioral mapping is an important first step when we start solving environmental problems. We discovered that we were learning much more than about good design and we were learning about whole kids and whole settings.

5. Increasing the teacher's sense of competence and sense of community. For me, a very important issue has to do with increasing the teacher's sense of power, of personal efficacy, of "I can do something," because that is where it really matters in the work with the kids. We see teachers who burn out, teachers who are exhausted, teachers who feel that what they do doesn't really matter. Helping these teachers realize that they are creative people, that there is something that they can do that does make a difference, is crucial. Some of our work on environment has been to this end. How can we remind teachers that they really have skills? Many times with our providing lots of specialist input, people come to believe that the specialist has the answer. The specialist has the thing that is going to make a difference for that kid, and the teacher is almost a babysitter, or just one who does what someone else suggests. But working with environmental design facilitation we offer teachers a process that uses what they know to help them make decisions, to help them take action, that really elicits their creativity, that doesn't diminish them, or disenfranchise them any further.

The other aspect is making people aware that they are not alone. A favorite author and writer that I would like to recommend to you is Seymour Sarason. He is a very special man who has written a lot about change in education. A chapter in one of his books is called, "Teaching is a Lonely Profession." If it is lonely with normal kids, it's much more lonely with severely handicapped children. And for teachers to feel that they're not in isolation, that they are part of some kind of community of effort, that they can work together with other people who care about their kids, care about their daily life, to make them feel that they are part of a working community, that's an important issue. I don't want to sound like environmental design facilitation is a panacea for all our ills, but these are some of the by-products. When people get together to solve problems and they all contribute the ideas they have to the solving of that problem, they become a community of effort. It used to happen with barn raisings, it used to happen with all kinds of community efforts--when our neighborhoods were other kinds of places. There aren't many places in our real

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world for us to be part of a real community. You can create community by people's interactions. One of the strategies for bringing people together and helping them plan and work together, is through some of these rather simple environmental issues.

6. Raising expectations. The last thing is that it's important that people see what's possible. I'm not interested in step 12. You know, where are you going to go five years from now. Because I know what makes the difference for people is going from nowhere to somewhere. If you suddenly see that we can make a difference together, that these kids suddenly look better, because they're in a better setting, or because so-and-so can now sit up and/or lay down, because he's in a place where his chest, his trunk are supported and he now has the use of his hands, that he can manipulate something, you suddenly realize, "You know, this kid can really do things." Next you say, "Well, if he can do this, then he could do that." So it's a whole sense of raising expectations. I can't quote Seymour Sarason exactly, but in the introduction to Christmas in Purgatory he says that the problem is in our sense of what's possible. It's not in how much money we have, it's in our sense of what's really possible. It's people making some of these changes, in raising expectations, one step at a time. So those are some of the points of design facilitation.

I'd like to show you some slides of some of the very simple changes teachers and design facilitators created.

This is the program, the Community Clinical Nursery Schools, that I used to work for in Massachusetts. This is really a recycled slide tape. All the good words have been said before, so I just cut them out and pasted them up as titles for the pictures. There really isn't anything greatly new under the sun.

This slide illustrates the idea of having loose pieces of furniture about that you can move to make your environment flexible and responsive to needs. I should mention a problem with ordering from catalogues. The catalogue that you order from has material that looks rather nice but doesn't appear to be quite right for your kids. Anyway, it's not going to arrive for six weeks or two months. By then things have changed. Also, ordering equipment is expensive.

A lot of time in classrooms is spent on the floor. Think about what it's like to be on the floor. Start thinking low, what's down there at their level?

I spent a lot of my first year cleaning closets--I really felt it was important. A big need is sorting materials and labeling it. In this room, the teacher had all this paper but nobody could ever get to it. There were also lots of blocks and materials that people weren't using. We just took some of the old blocks and made a new paper storage place. Thus, we had a place to put all the stuff that was needed and were able to get at it.

One of the big problems faced by teachers is breaking up space period-

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ically with some kind of flexible divider. We constructed dividers from the narrow tubes that carpet comes on. We made bases from plaster of paris and attached cloth between the tubes with clothespins--again a short term project.

Design problems can be worse in newer schools. In older schools you freely stick in screws, put in hooks, and so on; but a newer place is so intimidating you don't make friends with the janitor when you move into a new place, forget it--that's the most important person to line up with.

This slide shows an example of a confusing hallway. The ambiguity of going into a place like this with no environmental cues doesn't tell you where to go--left? right? We attempted to solve this problem with an activity that everybody does--body tracing. We did body tracings of some of the kids and turned them into posters that greeted them when they came in. Then the tracings pointed the way to the students' classroom.

These are some of the very basic considerations that should be present in a setting: 1) places for transition; 2) articulation, things that make expectations clear; 3) some sense of territory; 4) some places where there could be small groups; and 5) something that gives you an orientation about where you are.

One of the other things about working on the environment is that we can't expect our teachers to do everything. I have found that technical assistance people who come in and work are essential. Teachers can't do it by themselves--so we work together after school a couple of days.

This slide shows what was supposed to be an open classroom where children were to make decisions, choose some of their activities. However, the environment wasn't clearly set up to make that happen. She was really wondering if the kids could function in that environment and was ready to say that they couldn't. It wasn't so much that they couldn't, they just didn't have the support to help them. So we did some really simple organizing. First, the kids had to go across the room initially to put their coat in the closet--so they stopped four places along the way and it was, "No, no, not with the blocks now; no, no, you have to hang up your coat, Timmy." By making these cupboards that were right near the door we eliminated that problem by modifying the space. The art table wasn't big enough for the kids to work at. We took a very large piece of plywood, a 4 x 8, and supported it at the right height. We covered the walls with plastic because the church was rightfully upset when the walls got splashed. Since kids are going to splash, you need to plan for it. Where do you store things so that people can reach them? The other side of the divider turned out to be a very sensible place to hang the smocks. So it became a divider, it became a place for coats, and it became a smock hanger.

Sometimes we need to make temporary kinds of arrangements, and I have what I call a first aid kit of rope and clothes pins and pieces of cloth. These can make a space, a divider, or a new play area. Kids really love to participate in the design of their environment and some

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of our attempts at design have turned into celebratory events. Talk about getting people's attention, working together to make these little private corners really got them involved and then we took down what we had built.

The key to helping a lot of this environmental design happen is having a teacher's center that has quantities of raw materials and technical assistance to assist the teachers. If these are readily available, you can do something if you have an hour.

When Bob Audette was the assistant superintendent at Fernald State School, he took the teachers who were primarily working at the school house with the higher functioning children and reassigned them to the children on the wards. The teachers suddenly had to work on the ward with a population of students with whom they were very unfamiliar. They felt that what they were doing was not really teaching. Also, they didn't have many materials to work with. We worked together to find a place where they could feel more comfortable in teaching. So we built a resource center right next to the wards. These centers have to be on everybody's path to be widely used. Teachers are not going to go far away, the centers need to be close if they are going to be used by a lot of people. The center at Fernald was not only for the teachers but for the attendants who worked with the kids and their parents.

Nancy is going to share with you a much more complex setting for kids that I think all of us are much more concerned with. We can make a lot of generalizations about what you've seen, but I would like you now to see something that's very specifically dealing with another population.

I'm going to talk to you about a setting that some of you know quite well. This is a house at Munson State Hospital that Bob Arbib and myself worked on for the past two years. (The objectives and what we wanted to do with the space was written all around us so that we were really absorbing it.) Then we went about the house teaching the teachers how to look at the space and put it down on a piece of paper. What space are you in, how do you translate that into a way you can communicate. Going even further, after we did it freehand, we measured the spaces and put it into scale of an inch equals a foot. Then we collected materials all during this process, wood, plastic, metal, all kinds of pieces that were approximately one, two, and three inches, so that we could work in scale. Then we began playing with the pieces, making them into the ideas that we had talked about: talked among ourselves, to physical therapists, psychologists, and doctors who were involved with our children. What kinds of equipment do you need to do the kinds of things you want to do? How do you divide those spaces up so that it's possible? Each team member has a chance to work on each space and we design each room over and over again and keep the best parts of each design. Designs that seemed to help our objectives be realized. After each person put a design together, it wasn't always possible for everybody looking at it to tell what it was, so we shared our ideas and explained what the space meant to us individually. These teachers have not been trained in design, but are interested in their environment, in the space, but were frustrated about what was happening

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around them. They were learning what they could do as Bob and I were facilitating the design. Finally, we made final models of each space, not strict architectural models, close to scale, something we could look at and understand and share with other people. It's a loft space (a level in a space above the ground level) that was important to us for motor development. At one end of this space there is a fireplace which we left and built a large quiet area around it for exploring musical instruments. Music and rhythm exploration need close contact among teacher and student. We were interested in lots of movement and dance and self-image so the adjoining room is full of mirrors on the walls and in the middle it is empty space for expressive movement. There are platforms for crawling and pulling up on in order to get close to the windows to observe the outdoors. There is a big window that looks out on a nice open area. Another room functions as a sensory stimulation room. We decided this would be an area with lots of textures and lots of objects that were very responsive to the slightest movements. Our final design was of an art space and what we wanted it to be--a place where people could be on the floor and stretch out to work or to stand and work.

Once the designs were completed to everyone's satisfaction, Bob and I showed the teachers how to use simple tools. We began with precise measurements and the use of hand tools. It's not a major problem to change the environment. With some sort of vision and some help, all of us helping each other, we began to make major changes in this environment. We made it into a place that was still a home with normal size rooms, yet would give us physical closeness with the kids. At the same time, changes were necessary that would help to put their behaviors into a space where they could happen: self-destructive, aggressive, reclusive, all could function together. It's really hard to assess kids in an institution when there is no context for their behaviors, no way to see what they can do. We provided options for their behaviors--a place to choose from interaction, involvement, self-awareness, and growth.

One of the major things in taking risks as a group of teachers was that we decided that we wanted a sunken tub in the floor so that kids that were not ambulatory could reach down into this tub. It was stainless steel and something that we had scrounged on the gounds and something that we had decided would provide an option for our children. Bob and I had never cut a hole in a floor before, but we decided that we were going to give it a try and we did it--after much thought and some consultation.

It was an amazement to all that we succeeded--that we were actually able to look at structures and figure out what was possible. When we dropped the tub in and it fit, we couldn't believe it. Going through that process as a group was a growth process for all of us, as was the whole environment. But doing something that we had never done before was exciting. Just as it would be for the children.

Then there were other things that we did, like making holes in the walls. It was also possible because this was a house and didn't have stone walls like most institutions do. Other professionals and employees

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of this institution were unsure of our intent and the outcome, but finally did accept the risk with us.

A loft space is an area that is up at a different level than the rest of the room, and stairs that were there were incorporated into our design as an entry to the loft. Many of the children couldn't go up and down the steps alternating feet without someone holding their hand. We were teaching them things that are necessary for them to do in their daily lives and are part of their educational plans.

Things began to shape up little by little and finally, after many weeks of long hours of work, on opening day at 3 o'clock in the morning we hung out the sign for the Creative Learning Laboratory. It was a big thing for each teacher that we had gotten through the process together. Then we started bringing children to our space but not without the time to consider what we were going to do with each child in the space. I want to make it clear that these children don't come to the Learning Lab all day. They come for an hour a day, one day a week, which is a big concern. For a non-ambulatory child, we don't bring wheelchairs, the teachers have to carry the kids off and on the bus. We didn't really want a place where the kids could have wheelchairs. The kids can get around on their own and begin exploratory behavior.

In terms of educational objectives in relation to design, looking at a few case studies can be helpful. The objective for one child who is ambulatory, with some languages would be to increase her language. Her self-image and imitative skills were poor and needed developing. There were many behavior problems, some temper tantrums, some self-mutilating behaviors. So we're using make up and dramatic play to get her to imitate behaviors, to open herself up and use new words. Her vocabulary has increased noticeably during the past year through the development and incorporation of new activities. I think getting away from what Lou Brown was talking about, the sort of vertical progression, and trying to go in an area where you include many things that can develop fine motor, language, etc. all at the same time, depending on what you're doing.

For a non-ambulatory child, one objective is frequently motivation, simply to get her to move around on her own, to hold her head up, to lift her body herself and to get from one place to another without people pushing her. She began using a swinging platform that's on springs which is very responsive to body movement. Her vocabulary also increased because she was getting responses. She can get off and on by herself which provides independence in mobility. Providing a space where she can be close to other kids who are ambulatory and do things with them is essential. When you design things initially, they don't always end up being what you meant them to be--the children will find their own uses for everything when given the freedom and help to do so.

Media are used that involve children in activities where they can feel successful. It relates to developing their interest in making their own choice. They can make choices to paint, to play in the water, to crawl,

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to play music, to explore, to dance, to do small manipulations, all with a responsive teacher who waits for those moments when the child begins to make choices. The object is to get the children to the point where they can work in a group and interact with their peers and not just adults as most institutionalized children do.

Water is something that is very close to me programmatically. The use of water as a tool in the environment is one of the best stimulants for play. Most children will begin with water play even if they seem unable to involve themselves in any other form of response. As a space is considered for redesign, what is going to happen in that space--each area of it--must be planned. If an indoor water play space is needed, what other "water related" activities are desired. Painting, clay, bubbles, and play dough might all be considered for one area. How do you make things like floors and walls water resistant and still keep it an attractive, low cost endeavor? These are important considerations if this is the level of development of the group of children you are designing for.

This is a group process where the children who are ready for group in responding in a more cooperative play kind of effort, get together once a week for a much longer group. They have a ritual that begins and helps them to identify that it's time. They have a free time in the beginning with individual choice and then we begin by a rhythm thing, banging on the table and calling everyone's name so they begin to know their own name, know the name not only of the adults, but of their peers. They learn the names of adults much faster than of their peers. It begins to develop peer relationships that are very exciting to the point where the kids get so excited about the group now.

What Dr. Lou Brown said to all of us yesterday made a lot of sense to me--that working one-to-one with a child is very unrealistic. This is why we work toward a group. Institutionalized children need a lot of support to get there, and to continue to grow once they do recognize each other and relate in appropriate ways. Our goal is always to develop spontaneous interaction among the children, and when it happens there is no greater reward for the children or the teacher.

The institution is a structured place. Where there is outside space, the children are either led by the hand down a path or there are fences. So how do you cope with walking around outside when kids can't walk on rough terrain, etc.? How do they play in a normal playground when what they have is not a normal playground? So we also went outside and designed space outside a playground. For instance, institutional children who have had no models, may have a slide on their playground, but do not know how to use it properly. They walk up it, rather than slide down it. So we taught them how to use the slide, how to go down the slide and back up again. All those things we think are so simple, that we take for granted, they couldn't do because nobody had ever done it with them before. They can do it if we do it with them. We added a pet. We decided small pets are not really good for children who might have visual problems, who have problems tuning in and out of their environment, picking things out. So

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we have a goat and she's really terrific. The kids can feed her, they can hold on to her and run after her. She really turned out to be a fine pet. The out-of-doors is an environment too and must be coped with on a realistic basis in a way similar to more normal children if we are to get at the heart of the principal of normalization. Providing experiences for the handicapped which are as close to normal children if we are to get at the heart of the principal of normalization. Providing experiences for the handicapped which are as close to normal as possible in all cases and not just putting them in a nice middle class neighborhood and sending them to a middle class school. That's only the beginning.

Unfortunately, when children leave the CLL, they go back to an institutional environment which supports and encourages all of their negative behaviors to surface again. But, we have seen progress, so just 'magine how much more there would be if such a dichotomous situation did not exist!

QUESTION: Have you made any progress in getting in to that environment?

ANSWER: Yes, but it's been slow in coming. A design has been done. One of Elaine's students this year came to us as a practicum experience and did design the downstairs of that building which is for non-ambulatory kids. It's been accepted, there's money for it, and we're just waiting now for the hospital to decide when to do it. High school students are going to come in from the outside to help build it along with the staff, so it is in process. However, the ambulatory kids are primarily the kids who still come to the Learning Lab. The ones who are real behavior problems is something that is yet to come. The teachers are really concerned about that now because it's like seeing their work go down the drain.

QUESTION: How many students are out there?

ANSWER: There are 88 kids that live in that building, the particular space you just saw.

QUESTION: What do you look for when you enter a new setting?

ANSWER: When I discuss the systematic observation of behaviors with the teachers, I relate to three basic things: 1) the frequency of behavior; 2) the context in which the behavior occurred; and 3) the duration of the behavior. This applies to any behavior whether it needs to be eliminated or achieved. A behavior by itself can never be judged as normal or subnormal unless you relate it to these three specific things. One of the things we try to have our students do is actually chart behavior which they consider the abnormal along those three criteria. So when they say that rambling speech is one of the abnormal behaviors, we ask him, "How often does it occur in a given day? How long does it last?" We ask these questions so that our students learn to respond more than simply naming behaviors. We also teach our students to do behavioral mapping.

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Behavioral mapping is something that is done with a floor plan that you have in the location that you're reporting. You would have a floor plan and space on it for writing in the time, like every 15 minutes doing an observation. What we do in behavioral mapping is first do a general observation of people in all their settings and write down all the kinds of behaviors that you see happening, just generally. You're seeing what it is that they're doing and just sort of listing those things. One of the problems of behavioral mapping is that you can't record everything all the time. When you look at the behaviors and record what you see, you might have a list of 300 items. You and others must pull out the important items. What are the things we want to know more about? What do you want to know? Do you want to know about frequency of interaction? Do you want to know about self-abusive behavior? Do you want to know when there is flight behavior? Do you want to know when there is some aggressive activity? These are the things that might seem to be important. Thus, the first step in behavioral mapping is an inventory of all the behaviors that you see. Next, you select the important things that you want to know and you put them into some kind of categories, some simplified way. Then someone would take data in each of the settings that this person lives. You may be tracking a student to see how fast he moves around. He may never stop, never settle anywhere. If you're in that room for one hour doing recording and you have this incredible kind of scrawl, it's really clear that in that room there is no place for the student to settle. If you are doing a recording in another room and you notice that the student has some real patterns, there's some settling here or there. You have a visual document that proves the superiority of one setting over another. You can look at those things in an environment that a person is relating to. Where is that person attending? What is going on? Your map gives you that in some kind of a physical form. So that's the notion of behavioral mapping as an aide to systematic observation. You can keep this information and determine the effects of changing the environment upon student behavior.

QUESTION: How can we go from a list of objectives to a design appropriate to those objectives?

ANSWER: There are two things to do after you get objectives set: decide what you need and what you have. Now what you have are things that already exist. They have to do with staff around you, things in your community, what is available around you as a support system. As an example, in the institution where I worked there was a dump. We got a gorgeous stainless steel tub which we couldn't possible pay for at that dump. There are places around! What kinds of things in the community are there as support? There are businesses that discard things. One of the points in doing this process is not having to wait to get things--get them on your own! There are parents, service groups--there are people with projects looking to give their money to, the Kiwanis Club, etc., they have money to be spent every year, they want to do something good with it. Don't be afraid to ask. Find the support. There are high school students who need alternative high school options. They want to put in the time and it's really a phenomenal experience for them. If you help them and provide support

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for them, they'll be very reliable. Colleges, too, are another way to get support.

One closing thing when you start thinking about making our environment work a little bit better for the most vulnerable among us, it's better for all of us. We're all handicapped, we all would like it to be clearer, we'd all like to know where you're supposed to be, what door do you go in. Sometimes these symbols for the bathrooms keep getting cleverer and cleverer and I can't remember which means female. So, again back to that personal thing, that is, it's not only making it better for "them," it's for us.

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PROJECT MESH

An Educational-Based Service Delivery Model for Severely Handicapped in Rural, Sparsely Populated Areas

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Campbell

PROJECT MESH

An Educational-Based Service Delivery Model for Severely Handicapped in Rural, Sparsely Populated Areas

During the past decade many rural schools have formed multi-school district cooperatives in order to efficiently deliver special education services to children with mild and moderate handicaps. Severely handicapped students residing in rural sparsely populated areas, however, are frequently not provided educational services by their special educational cooperative programs. With the passage of P.L. 94-142 public schools will by 1978-9, be required to provide educational services to all students regardless of the extent of their handicaps.

The problems facing both rural and metropolitan schools in providing services to students with severe handicaps are essentially the same; however, solutions to these problems may be quite different. Both the rural and metropolitan areas face administrative problems in finance, manpower, facilities, transportation, as well as instructional problems related to serving persons with severe handicaps. These problems are greatly intensified and compounded in rural, sparsely populated regions of the country, for the following reasons:

1) Professional competencies associated with fields of education, speech therapy, language development, adaptive physical education, physical therapy, occupational therapy, and vocational training are generally unavailable in rural areas. If these professionals are available, they frequently do not have sufficient experience or training in applying their skills to problems associated with severe learning problems.

2) The number of students within a multi-school district special education cooperative who have severe emotional disturbances. motor impairments, visual impairments, language delays, speech disorders, or hearing impairments is exceedingly small in comparison to metropolitan school districts. In metropolitan areas there are generally sufficient number of students to justify a number of different specialists to serve as support personnel to the severely handicapped educational programs. In rural special education cooperative programs, the total number of students with one or more severely handicapping conditions is frequently less than fifteen. For example, after extensive "child find" activities for three years in Parsons, Kansas (population 14,000), only three school-aged severely handicapped students were identified

3) Not only are there fewer students per school district in rural areas, the distance between the severely handicapped students and their attendance center is greater than in metropolitan areas. Often the distance between the student and the nearest attendance center which offers a needed educational service is so great that it is not feasible to transport the student to the appropriate site. Most special education cooperative districts include a number of smaller communitites with a distance of a minimum of 20-50 miles between each community. Often the distance between students with similar needs is so great that they cannot be served by the same site.

4) The current national trend toward declining student pouplation and the resulting over supply of public school facilities is not evident in many rural areas. There is a trend toward a slight increase in the number of persons moving to rural settings. As a result of this lack of student decline, many rural schools are experiencing a shortage of classroom space. This, coupled with the current national economic trend and the tendency of voters to reject proposals for new construction for classrooms suggest that the current "space crunch" will not improve in the near future.

5) The general shortage of trained manpower to serve persons with severe handicaps is intensified in rural areas. Though this may appear somewhat inconsistent with previous comments regarding declining populations in metropolitan areas, the problem is well documented in the area of rural medicine. This difficulty may be a function of lower salaries and/or the current recruiting practices of rural school districts.

SERVICE DELIVERY MODEL

In anticipation of mandatory education for all school-aged, handicapped children, the Project for Model Education for Severely Handicapped (MESH) was developed to identify and address problems related to the delivery of educational services to severely handicapped students residing in rural, sparsely populated areas. By forming multi-district cooperatives, rural schools throughout the nation have been able to provide educational programs for the moderately handicapped. All school districts in Kansas, for example, provide educational services to all school-aged, moderately retarded children.

Project MESH predicted the development of its model on evidence that public school programs for severely and profoundly handicapped children from rural areas were not likely unless these programs could interface with existing programs for moderately handicapped students. Because of the small numbers of severely and profoundly handicapped children in rural areas, a separate educational program for these students is unfeasible.

Preliminary data compiled from extensive statewide "child find" efforts in Kansas have identified only 50 school-age unserved children who were living at home. This data bares out the predication that the number of

school-aged children still requiring services is indeed small (Child Find, January, 1977).

Another basic consideration in designing the program model was that the training needs of severely handicapped and moderately handicapped children are similar and, in many cases, are the same; therefore, education services could be delivered to severely handicapped students through classrooms, programs, personnel, and transportation systems provided for moderately handicapped students. Appendix A provides a summary of seventy-two instructional training programs, many of which include both moderately and severely handicapped students enrolled in Project MESH. (BEH Validation Report, 1977). By altering existing programs for less severely handicapped, providing a system for individual instruction for all students, a well trained teaching and paraprofessional staff, and by providing data based instructions programs, most severely handicapped persons can receive education programs within the context of existing programs.

Thus, the MESH model was designed to benefit the severely handicapped student living in rural, sparsely populated areas. It established the feasibility of utilizing existing community and school cooperative programs and training for the severely handicapped student, without necessitating residential living arrangements or additional transportation systems. To summarize then the major goals of Project MESH are threefold:

1) Develop and implement training intervention and administrative arrangements to deliver comprehensive educational services designed to meet the developmental needs of severely handicapped children and youth in rural, sparsely populated regions of Kansas;

2) Demonstrate the efficacy of a model education and training program in which severely handicapped students are integrated with moderately handicapped students and the efficacy of a model which could be replicated in rural school districts through the utilization of special education cooperatives; and

3) Disseminate information about the intervention and implementation strategies comprising the model program to professional and non-professional personnel concerned with providing effective services to severely handicapped children in rural areas around the nation.

TRAINING DELIVERY MODEL

We have suggested that severely handicapped students can be integrated into existing facilities serving the moderately retarded child. Let us assume that a multi-district special education cooperative can provide an integrated classroom for its' severely and moderately handicapped students. The likelihood is that only one or possibly two classrooms will be necessary if they are strategically located within the boundaries of the cooperative. A major drawback to adequately serving the severely handicapped student in a rural classroom still exists, that is, providing the teacher with adequate human and curricular resources. In order to develop a model which other

communitites could replicate or adapt, MESH was designed with features corresponding to resources which are widely available to public school programs for trainable mentally retarded students. The typical resources available would include a certified teacher, and three paraprofessionals for approximately 12 students or a ratio of one trainer to three students.

Most cooperatives then have the minimum resources available to operate each classroom. These resources are quantitative, and they do not account for the qualitative measure of a program for severely and moderately handicapped children. At this time we are all aware of the lack of systematic and precise available curricular materials for the severely handicapped child. We are also aware of the limited fiscal resources available to provide consultive and curriculum development services to rural programs. We recognize that a rural cooperative will have one or two classrooms which require a miltitude of resources including programs and expertise in: communication, daily living, prevocational, vocational, preacademic, academic training and physical and occupational therapy. It is highly unlikely that any one teacher will possess all these competencies indepth and thus an alternative means of obtaining these skills is necessary to deliver an appropriate (as defined by P.L. 94-142) educational service.

It is likely that physical and occupational therapy services can be contracted with hospitals and other agencies. The needs of students requiring physical and occupational therapy services can be met through teacher and paraprofessional trainers.

The need for continued curriculum development planning and child progress measurement (again P.L. 94-142) is not so easily accomplished. The complexity of meeting each child's individual needs in terms of communication, daily living, vocational, preacademic, and academic training requires the assistance of specialists in these areas. Typically, these specialists are non-existent in rural areas, but the technology does exist or is under development in other areas. The problem then is how does a special education cooperative obtain these personnel? Most cooperatives are already fiscally overburdened, but P.L. 94-142 speaks to quality as well as quantity in terms of individual needs and child progress, presenting a dilemma of exasperating magnitude.

Project MESH has worked with two training delivery models in an attempt to determine an adequate means of providing classrooms with quality resources. During the first year of the project, staff resources were organized into three departments (communication, academic, and survival skills), each responsible for specific subdomains of the curriculum, thus allowing the staff to concentrate on fewer curriculum areas. Each department developed it's respective curriculum area by adapting or modifying existing instructional programs or by developing new ones under the guidance of specialists. In addition each department was responsible for training students in its' respective curriculum area.

Under the departmental structure each classroom teacher was responsible to the academic specialist, each paraprofessional skill trainer was respon-

sible to the daily living and vocational specialist, and each communication technician was responsible to the communication specialist. Therefore, each trainer was responsible for a specific element or elements of the curriculum under the direction of a resource area specialist. This model permitted each trainer to become an expert in one area and to continue developing needed curriculum. The department model relieved the teacher of the responsibility of becoming an indepth expert in every area of the curriculum and simplified the process of curriculum development, error analysis and program modification.

The departmental model, which is an intrarelated training model, has the advantages of "dividing" the curriculum into segments at the department level and having persons who are assigned to this department responsible for isolated components of the curriculum. This approach allows the staff to specialize in a small component of the student's Individual Education Plan. The obvious disadvantage of this approach is that it is difficult to prevent the student from becoming compartmentalized and his program from becoming fragmented or intrarelated. Project MESH began with an intrarelated training model initially for staff training and to develop a basic curriculum. Once staff were specialized and a basic curriculum was developed, an interrelated model was adopted. This approach allowed for departmental staffing patterns, yet encouraged more interactions between training programs and thus offered more opportunities for the student to receive reinforcement under a variety of different stimulus conditions. The impetus for this change was the realization that language skills learned in one structure were not being used in other settings within the school. To get language generalization between settings at school required that trainers from the other settings become knowledgeable of the language skills being trained. If a child can make the response, "I want soap,", under the stimulus conditions presented by a communication trainer, he is meeting one training objective; but unless the child can make the same response under the stimulus condition presented by the daily living skill trainer when teaching handwashing, mediated generalization of skills from one content training to another has not occurred. In this case a significant training objective for the student will not have been met. In an intrarelated model, conditions are not systematically arranged for the student to generalize a skill learned in one setting to another and thus, the probability is lessened. The departmental model, or intrarelated model, tends to decrease the probability that interrelated training will occur since the staff is accountable for isolated curriculum areas.

In order to avoid the pitfall of intrarelated training the project is focusing on a revised training delivery model which is best described as interrelated. Implementation of this adjusted structure has required considerable redirection of staff and staff responsibility within Project MESH. An interdisciplinary team consisting of each department head and the project director was formed to accomplish an interrelation of departments and their training function. The interdisciplinary team serves to interrelate all aspects of student training and program management by coordinating the following functions:

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1) Student assessment and reassessment
2) Student programming and reprogramming
3) Data analysis
4) Program development
5) Behavioral control

In order to meet these responsibilities a major role of the interdisciplinary resource team is to develop, adapt, and revise curriculum materials to meet the needs of each student in each classroom. Each classroom in the program is organized with a training team which works with their respective counterparts from the interdisciplinary resource team to develop and maintain training systems. For example, the paraprofessional communication technician in each classroom is accountable to the communication resource team specialist and is responsible for outlining the communication needs for each student and assures that all communication skills are generalized to other training settings, and reinforced when spontaneously emitted.

In summary, the interdisciplinary team approach to training provides a feasible means for multi-district cooperatives to:

1) Pool limited fiscal resources with other multi-district cooperatives to obtain a core specialist staff thus, spreading their resources across enough students to reduce cost.

2) Develop an extensive curriculum base.

3) Reduce the need for teachers and paraprofessionals to become experts in every specialized curriculum area immediately.

4) Assess and prepare appropriate individual educational plans for each student.

5) Collect and centralize student progress data which, through error analysis can be used to improve the quality of the curriculum and hence, increase the probability that each student will receive an appropriate educational program.

6) Assure the mediation of training in each curriculum area to increase generalized usage of skills in all training conditions.

CURRICULUM DESIGN

The MESH curriculum is based on a number of specific assumptions related to good teaching practice:

1) Every student has a right to an appropriate individual interrelated educational plan.

2) Assessment of student needs and progress must be indepth and ongoing.

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3) Training must be systematic, sequential, and data-based to assure continuous student progress.

4) The generalizability of skills must be given priority.

5) Generic competencies which do not require students to be trained on each individual skill are training priorities because each student cannot learn every individual skill.

The first consideration in developing specific training content has been to meet the needs of each student at MESH. For this reason some areas of the curriculum have been developed to a greater degree than others. The curriculum outlines presented in this Chapter represent the specific needs of the MESH student population and are not intended to be generalizable to all populations of students. The programs are meant to represent a foundation on which other professionals may modify and elaborate on, to meet the specific needs of their students. The major components of the MESH curriculum are outlined in the following section and provides a broad outline of each curricular domain including communication, survival and academic content.

COMMUNICATION

The majority of severely handicapped persons display a lack of overt language, or at least a deficient or delayed language system. Since our society is a verbal society, the absence of a communication system may characterize a person as being "handicapped" more than any other behavior. Without a communication system the severely handicapped student cannot express his wants, needs, feelings and relationships with others; and his progress in other skills will most likely be decreased. The acquisition of language is a complex process that is crucially related to the student's cognitive perceptual growth and his interaction in an environment of objects, events and relations. Therefore, language cannot be trained in a sterile environment or as an isolated skill. A student's language training program must incorporate the content and skills from the self-help, domestic and academic programs, and in turn, those programs must utilize the student's communication system to extend the student's trained language behaviors into his daily life.

The four major aspects of the development of a student's communication program are:

1) Determining a language modality.
2) Determining the functions of language.
3) Determining the semantic relations (meaning).
4) Determining the grammar (vocabulary and syntax).

Assessment

Only a few standardized language tests are administered during the course of training. In general the results of these tests show how a

student's scores compare to the scores obtained from normal children and do not indicate specific training objectives. Assessment is important only as it relates to training, therefore, the content and sequence of training has to be specified by the results of the assessment process. The communication assessment system used by Project MESH is conducted in both non-structured and structured settings.

A student's assessment includes assessing the developmental functions of language, the semantic relations, and the linguistic structures which are displayed. These behaviors are assessed by a battery of three tests: 1) a checklist, 2) general tests, and 3) specific tests. The three types of assessment tests are directly related but differ in degree of precision beginning with the criterion based checklist which leads to more specific pretest or baseline measures.

The communication checklist is a criterion reference test that provides the language trainer with observational data that is used to select more precise tests. The checklist is completed by a person who is familiar with the student, such as a parent or classroom teacher.

The checklist assesses: 1) nonlanguage behaviors that are important in designing a training program for the specific student being assessed, 2) prelanguage behaviors that reflect the student's cognitive skills, 3) behaviors that are necessary for determining the child's language modality, 4) the functions of communication that are displayed by the student and the grammatical complexity of the student's language.

General Assessment Battery: The data from the checklist is analyzed and from that information a corpus of tests is selected from the General Assessment Battery. This battery of test contains approximately 60 behaviors which were selected from the more critical behaviors listed on the checklist. The General Assessment Battery is divided into five major areas which correspond to the communication programs that are available. These assessment categories are:

1) Early Conceptual Assessment
2) Prelanguage Assessment
3) Early Language Assessment
4) Early Intermediate Language Assessment
5) Late Intermediate Assessment

The individual tests within each category are arranged in a hierarchy from easy to more difficult skills. Each test contains ten to twenty test items and gives a percentage score which is graphically plotted on the speech and language profile. Specific criterion levels are given to determine if the student needs training in a specific area or if further testing is necessary. Test results of the Checklist and Prelanguage Assessment are used to determine if the student is a candidate for the oral or nonoral language strands of the communication training program. Test results in the receptive component of the Early Intermediate Language Training and further specific pretests determine a feasible communication modality for the student

and assesses the grammatical aspects of language.

The general assessment battery is completed when the student performs below 20% correct responses on five consecutive expressive tests and at chance level on five consecutive receptive tests.

Pretests: The pretests are administered to determine the specific programs that are to be trained and the stimulus conditions that are appropriate for initial training. For instance, if the Checklist results show that a student is displaying the Early Conceptual behaviors, and is nonverbal but does not display the receptive behaviors listed in the Early Language Training, additional testing would determine if the student has:

1) The finer visual perceptual prerequisites for the written program,
2) Motor skills necessary for the signing program, or
3) A symbolic abstraction and the ability to discriminate pictures that are object-referents.

If the student does not demonstrate fine visual perceptual skills, but does show the basic motor movements for signing, other pretests will be given to assess if the student:

1) Can approximate the initial signs when a model is presented.
2) Can maintain a handshaped model.
3) Resists handshaping.

Spontaneous speech samples are also used to gain additional information concerning a student's level of language functioning. The information on both the structured and nonstructured tests are compiled and analyzed to determine the developmental functions of language, the semantic relations and the linguistic structures that the student displays.

Communication Training Programs

The general outline of the communication curriculum is shown in Table I. When a student enters the program, the battery of training-related assessment tests are administered. If the student does not display the behaviors within the Early Conceptual Training program, he is placed in training at that level. The analysis of the student's acquisition in that program and continued assessment data are used to determine the modality of communication to be used with that specific student. The curriculum of programs are divided into four basic programs:

1) Oral training program (speech),
2) Written training program,
3) Manual signing program, and
4) Picture-cue communicator training program.

The linguistic skills the student learns within each of those programs are the same, whether the student is talking or signing.

Early Conceptual Training: The Early Conceptual program is the first program within the communication continuum. The program emphasizes the earlier developing skills the student must learn in manipulating and interacting with objects and people. The skills trained withing this program are prerequisite for the other training programs. The student must demonstrate these skills or be trained on these skills before entering the other programs. Many of these programs are similar to those in the academic and motor areas because they are prerequisite to a number of later skills. The training in these areas are specifically coordinated with the other training teams.

Modalities for Communication: In past years speech was often used as being synonymous with language and if a student was nonverbal, speech, rather than language, was emphasized in the student's training program. Recently, those involved in language training have recognized that language modalities other than speech should be available to the severely handicapped student (Vicker, 1974). Many of the severely handicapped students display an oral-motor involvement, a hearing loss or other factors that indicate that they may require a long and intensive program. Many of the severely and profoundly handicapped persons may never acquire speech due to servere motor impairment. However, these students should have training in order to communicate in a nonspeech mode. Therefore, one of the primary goals within the communication curriculum is determining a communication modality for each individual student.

One oral program and three nonoral programs are contained within the communication continuum. The nonoral programs are:

1) Written program
2) Manual signing program
3) Picture Communicator

The hierarchy of the non-verbal programs is sequenced according to their relationships to the adult language systems and according to the extent to which they can be expanded.

Written Program: The written program is the highest in terms of level of difficulty. But, if the student displays the prerequisite skills, the written modality of communication offers the advantages of being understood readily by adults and producing a permanent product. The written system may be limited at first, consisting primarily of single word cards. As the language content is expanded, the student learns the semantic relations and the syntax at the two-word, then three-word level.

Manual Signing Program: Certain advantages and disadvantages are inherent within the manual signing system just as they are present in other nonoral systems. The primary advantage of the signing program is its potential for spontaneous communication. Appropriate communicative features, such as facial expressions and eye contact can be maintained throughout the communication exchange. The transmission time is short, providing an efficient means of communication for student, trainer, and listener. To

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be functional, however, the receiver must be familiar with the system and the response topography must be available to the student before the system can be utilized in an effective manner. Initially, the need to train teachers and parents may seem to be a disadvantage, but since the manual sign language functions as a novel language system for the teachers and parents, it may help them to serve as better language trainers. Initial observational data collected in our classrooms shows that the teachers attend to the student's signs, prompt the correct signs and expanded the vocabulary of signs significantly more than the oral correlates presented by the verbal students. The teacher becomes more aware of the student's language and communicates with him at his level of functioning.

The manual signing program is designed to serve three functions:

1) A language system
2) A speech initiator
3) A language facilitator

The first two components are designed specifically for the severely non-verbal child. The third component, using manual signing as a language facilitator, is utilized primarily with the students who have some verbal language. It is used as a prompt to enhance the acquisition of the verbal elements.

For the most part, the lexicon used in the manual sign system for non-verbal children is selected from the American Sign Language (ASL) and Signed English. However, there are sign variations in ASL that may be regional, just as there are dialect variations in the English language, so signs with the same meaning may not be produced in the same way even by deaf signers. Since the ASL syntax is different from the English syntax, it was not selected as the syntax system for our signing program. Each sign is trained as equivalent to a written English gloss of that sign and sign combinations are constructed as early developing structures. Training signs as a gloss of English is done for two reasons. First, the system often functions as a speech initiator, and it is felt that training two different syntax systems may be confusing to the child. Second, verbal children who are learning English syntax, are around nonverbal children using signs.

Nonoral Communicator: The non-oral communicator program is similar to the written program, except that pictures are substituted inplace of written words. Small pictures representing the vocabulary (nouns, verbs, etc.) are used via a communication board or a mechanical system. This system presents some disadvantages because it may not be readily in reach when the student desires to initiate communication. If the student is not ambulatory, the communicator can be attached to the student's wheelchair. Students with poor motor control may be trained to use a head stylus or touch-plates for a response modality.

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Prelanguage: The pre-language program is designed to train a student with limited vocalizations to produce a set of nouns. The sounds that the student initially produces are paired with objects in order to give meaning to the student's vocalizations. Motokinesthetic techniques are used to aid the student in emitting additional vowels and consonants. Shaping procedures are used to train the student to more closely approximate the phonetically correct word. For some students, manual signs are used as prompts and the student is trained to rhythmically pair the sign with the work production. The student is initially trained to produce words that are monosyllabic or repetitive bisyllabic and contain vowel-consonant-vowel combinations. The initial set of words are selected from within the criterion of functional words from sounds the student can imitate and from earlier developing phonemes.

Early Language Training Program: The Early Language Training program is designed to expand the student's vocabulary and to increase intelligibility. The semantic organization of the lexical items is refined and additional examples of semantic functions are presented and expanded. The basic grammatical relationships are trained and additional content words are incorporated within the basic structure. The student also learns to use the trained structures to express a number of different language functions. A social communication system is introduced early within this program. The student is also required to give appropriate responses to "wh" questions during the Early Language program. The specific training stimuli are arranged for contrast in order for the student to rearrange the word order into different syntactic structures with different meanings. After the student has completed the Early Language program, he is placed in the Early Intermediate Language Training program.

Early Intermediate Language Training: The length of the student's utterances are extended by expanding the classes of content words and introducing function words. At this stage the student learns to incorporate internal markers of questions and negation into his utterances. He also learns to incorporate internal markers of questions and negation into his utterances. He also learns to use the optional replacesive pronouns and to use a variety of different utterances for the same communicative function.

Training

Once the student variables and environmental variables have been determined and the initial objectives have been outlined, the training setting, training techniques and materials are selected for the student. Both structured and non-structured environments are used for the training settings. The communication area is defined as the structured environment. The structured component of training is designed to arrange conditions to control the context of communication and thus, predict the probability of a type of response occurring. Structured training also provides the student with the opportunity to respond more frequently. However, the trainer takes advantage and encourages each spontaneous utterance of the student so that the setting is not artificial and static.

The classroom is defined as the primary non-structured setting, although other training areas also are utilized as non-structured settings. The student thus learns that language is required in a number of settings and is to be directed to a number of listeners.

A variety of techniques are used among the training programs within the student's training program. Many of these techniques are general and operated across each training task; others are more specific and are utilized only for certain tasks. We do not suggest that one set of procedures must be incorporated into training for the formulation of an effective, efficient program. Combinations of different procedures have been found to be effective in training both similar and dissimilar behaviors. Certain procedures may be effective but not practical in terms of some training models.

The following general procedures are used for training in the communication programs:

1) Stimulus-response-reinforcement paradigm
2) Comprehension, referential imitation and production format
3) Concurrent training
4) Prompts
5) Grammatically progressive expansions
6) Specific criterion levels
7) Magnitude of reinforcement

A variety of different types of materials are used in student programs. Spontaneous and "arranged" events are the most natural stimuli and the most inexpensive. However, waiting for each natual stimulus to occur may take time and controlling the response may be difficult. A certain amount of natural stimuli must be utilized, however, if the student is to use spontaneous language in non-training settings. Pictures and slides depicting a student, his peers, and his environment are often used for training materials and in some individualized programs purchased materials and line drawings are used. Materials and events were interchanged to maintain student interest. Materials often varied somewhat among specific children since each child had specific interests and preferences. The most important "material" can be the trainer, and his ability to relate the objectives of the program to each child's needs and responses.

SURVIVAL SKILLS

There are no generally accepted procedures for assessing a student's training needs in the survival skill curriculum content areas. A variety of behavioral checklists are available and can be useful in identifying potential training objectives. However, the selection and ordering of these target behaviors remains primarily a subjective judgment of the school personnel and the parents. In deciding which of the myriad of training needs were to be formally included on a student's Individual Educational Plan (IEP), the project considered the following:

1) Survival skills ordered in an easy-to-hard sequence so that each

successive training program adds to the chain of behaviors required to complete a long term objective. This strategy reduces the number of new skills that the student needs to learn in order to complete the next higher training program.

2) Curriculum content areas in which the normal developmental sequence is well documented (i.e., language development). A developmental model is used to order training priorities. For older students a normal developmental sequence frequently cannot be followed. For example, in the area of fine motor coordination a primary age student may benefit from a training sequence of toy assembly which involves fine motor skills such as using different type of grasps, coordinating both hands, discriminating placement of objects, and screwing parts together. A high school student would receive similar training but the task may be a small bench assembly task in a vocational training sequence.

3) Evaluation of the entire school or a sample of the school to determine the training sequence when neither normal developmental sequences nor an easy-to-hard continuum is available within a curriculum content area. By ordering the training items by the percentage of the sample that need training on each item, one can then determine an easy-to-hard sequence. For example, if 90 percent of the sample needs training on one skill and only 10 percent need training on another, the 10 percent skill would be considered less difficult than the 90 percent skill.

4) Older students who have fewer training days remaining during their public school courses; for these students the decision concerning what to teach becomes more subjective and less developmental. In these cases, one needs to predict the demands of the environment in which the student will find himself once he leaves school and to select the skills believed to be most critical for successful entry into that environment. For example, the normal developmental sequence and/or an easy-to-hard continuum may suggest that the high school student needs to learn basic arithmetic concepts before learning to prepare food items. In this case, the IEP may be written to teach specific food preparation skills without completing the entire developmental sequence related to functional math.

A number of available behavioral checklists are used which provide an assessment of several domains and subdomains as well as a number of specific skills within each subdomain. Project MESH uses three instruments in the assessment process:

1) Camelot Behavioral Checklist (Foster, 1974)
2) Topeka Association for Retarded Children Assessment System (Sailor and Mix, 1975)
3) Portage Project Checklist (Shearer, et al, 1970)

These three basic instruments, with considerations described above, provide

a continuum of general assessment. The CBC provides general functioning information for older students. The TARC is appropriate for younger, more severe/profound students. Although not specifically designed for severe/profound students, the Portage does provide information concerning early developing skills. The skills identified from the checklist are then included as part of the student's individual educational plan in the area of survival skills.

Modality

The primary modality for training programs in domestic, cooking and vocational skills is visual. The visual stimulus format can provide a functional system similar in function to that of written words. The visual stimulus provides an S^D for doing the task pictured. Each step in a task is sequenced into a series of pictures which the student follows as he completes a task to its terminal behavior. The picture sequence is bound into a book format which can be used as an instructional tool.

Visual Stimulus Training

Not all children will readily use a visual strategy to acquire information to complete a task. Many students require training to use visual stimuli. A prerequisite training program has been developed to teach students a visual learning strategy. The program uses a match-to-sample strategy to train severely handicapped learners to interpret pictures. This program begins with matching single objects to single pictures, then proceeds to sequencing objects left to right, as they are sequenced in pictures. The final step is positioning objects in relation to each other as they are shown in pictures or performing an action with the object, such as placing an object in, on, under, or beside other objects. (For a more detailed description see, Teaching Survival Skills to Students with Moderate and Severe Handicaps, Spellman, C. R., et al, in Snell, M. E. (Ed.) Systematic Instruction of the Moderately, Severe and Profoundly Handicapped. Columbus, Ohio: Charles E. Merrell (in preparation).

Survival Skills Training Programs

Table 2 provides an overview of the survival skills curriculum. Classes of programs are listed according to domain and level. The curriculum is further divided into five levels with Level I being the lowest behavior level. Each class is divided into subdomains. Within each subdomain specific programs have been designed to teach targeted skill deficits.

Self-Help: Programs in this area include eating, dressing, and personal hygiene skills. Each program consists of a task-analyzed sequence. The steps are broken down into observable behaviors which culminate in completion of the task.

Cooking: The Project MESH cooking programs use visual stimulus instructional materials for meal preparation. Meal preparation is a complex area for training because of the number and scope of behaviors necessary to cook

balanced meals. Some of the programs also have intensive training procedures supplemented as a branching strategy. Some skills such as pouring, using can openers, and stirring require additional training through branching programs.

The cooking program is divided into two main sub-categories: preparation of food items, meal planning and shopping. Efforts have primarily concentrated on food preparation because of the natural consequences associated with it. A student who could not plan meals could still live semi-independently if menus and food items were provided. The teaching strategy used in the cooking program is similar to the Project MORE (Lent, 1974) teaching strategy.

Domestic: As in the cooking program visual stimulus instructional materials are used to train home care skills, repair and maintenance of clothes and laundry skills. A student needs to know not only how to perform the domestic skill but also when to perform it. The stimulus being developed by MESH to help students determine when to perform a domestic task consists of a weekly schedule chart showing tasks to be completed by the student on each day. An additional visual stimulus instructional material, the job chart, is necessary in teaching domestic skills. The tasks are represented visually in a vertical column at the left of the job chart with days of the week listed horizontally at the top. The pictures representing tasks on the chart are the same as on the front cover of the instruction book. A blank square on the chart indicates a task requiring completion. The student consults the chart, sees which task is to be done, performs the task, and marks an "X" in the corresponding blank square. When the daily tasks are completed, the teacher checks the student's work to make sure each task was done properly.

All skills are trained with procedures similar to the teaching strategy for food preparation programs. The Project MORE teaching strategy combined with visual stimulus instructional materials is used.

Vocational: Programs within the vocational area are trained using a combination of the Project MORE teaching strategy, the "Try Another Way" teaching strategy (Gold, 1975) and the visual stimulus instructional materials. The programs are sub-categorized as pre-vocational and vocational.

The pre-vocational programs are designed to each students the skills necessary for satisfactory performance on vocational tasks. A sequence of pre-vocational tasks has been developed which progresses from sorting objects to tinkertoy assembly to erector set assembly. It should not be interpreted that pre-vocational tasks need to precede vocational task training. Rather, the pre-vocational tasks were selected to be tasks which are more chronologically age-appropriate while containing elements of behavior which are similar to those in many vocational tasks. For example, tinkertoy construction of a small car is very similar to many small bench-assembly tasks and extremely similar to Dr. Marc Gold's (Children's Research Center, University of Illinois, Champaign, Illinois) bicycle brake assembly program, while still being age-appropriate to early elementary-school-age

children. Following instructions for tinkertoy assemblies coincides with many other assembly tasks involving discrimination of parts, correct placement and fine motor skills. In the vocational area the same training strategy is incorporated into teaching complex bench assembly tasks.

ACADEMIC

Table 3 provides an overview of the content areas for the academic curriculum components of the project. Included in this table are a listing of specific programs in the domains of Arithmetic, Reading, Writing, Social Skills and Motor Skills. Many of the general assessment and training procedures used in this curriculum area are similar to those described in the communication and survival skill section and will not be discussed separately. Instead, those specific assessment procedures and instruments which are specific to programs in the academic curriculum will be described.

Assessment

Of major concern to the project has been the development of an appropriate general assessment battery for arithmetic and numerical skills. As with other areas of the curriculum, existing assessment instruments for arithmetic and numerical skills functioning were not designed to test severely handicapped children and did not adequately break down the elements necessary to teach these skills. The assessment inventory for arithmetic and numerical skills consists of 91 items ranging in difficulty from object matching to measuring skills. The inventory is a criterion reference test which provides the teacher with observational data used to select more precise tests. A parent or teacher should complete this phase of testing. If the data indicates that the child has an adequate base for training in arithmetic skills, training may begin with arithmetic operations or related skills such as use of money, time-telling or measurement programs. If the student does not demonstrate an adequate base for these programs, a series of pre-arithmetic assessments is administered.

The pre-arithmetic assessment test is a battery of 26 sets of ten-item tests which are arranged in a hierarchy from easy to more difficult skills. If the data indicates that the student has scored below 90 percent on any subtest, training begins at the pre-arithmetic level before proceeding to more difficult numerical skills presented in the inventory. An exception of this would be an older student whose time in school is limited. Such a student may have more critical needs and it would be more relevant to use prosthetic training programs which are described below rather than to proceed through the linear sequence. Younger students, however, should receive pre-arithmetic training which would begin with the first skill on which his test score is below 90 percent.

Prosthetic Training Programs

Many older students, as discussed above, will not have the opportunity to progress through a developmental sequence of skills in arithmetic. Students must have basic numerical survival skills. They must be able to tell

time, handle money, and do rudimentary arithmetic operations. To meet this critical need for many older students at Project MESH, a number of programs have been developed.

Calculator Training: This program teaches the student the functional use of an electronic calculator. It's use is trained through a match-to-sample strategy. The sequence consists of 22 steps which begin with the student learning to enter single, then multiple numbers in a left to right sequence. The terminal objective of the program is for the student to be able to enter an addition or subtraction problem presented to him in the standard vertical format of one number above the other.

Digital Time-Telling: Reading time on a conventional clock is a difficult concept to teach the handicapped student. The digital clock has become a common sight in today's environment and the concept of time appears to be easier to teach using a digital read-out.

The digital time-telling program uses a calculator modified to display only four digits. The only prerequisite for the program is that the student be able to read numbers 0 to 12. The program uses a pretest consisting of 12 randomly selected times. Each of five steps in the training includes all 12 hours and 12 minutes.

Students receiving training in digital time-telling wear a digital watch during the school day. The student may be asked for the time of day at any location, by any staff member in the building. The student's response is recorded on a tally which he carries and becomes a record of his time telling behavior. In this way the student's training generalizes to functional settings where time is important.

Money Handling: The calculator is used with this program to simulate the print-out on the typical cash register. The prerequisites to the program include the ability to read numbers from 0 to 9 and to count coins or bills from a large set.

The program consists of four steps including purchases of less than a dime, a dollar, ten dollars and one hundred dollars. Reviews from the previous steps are included in each successive step in the program. Studen move through the sequence not only in simulated settings, but also in a community grocery store where students generalize the learned skills as they purchase food for the project's cooking programs.

SUMMARY

We have tried to provide the reader with a capsule view of Project MESH and attempted to convey the concept of:

1) alternative service delivery models
2) individual educational planning
3) interactive and generalizable training delivery
4) systematic, sequential, and data based curriculum development

The service model and curriculum outline presented in this chapter represent an initial effort to develop an instructional model for rural schools. We believe that components of this model are replicable in a wide variety of settings with a wide variety of students. Due to the limitation of space not all training programs could be presented. Those programs that are described are only briefly outlined.

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APPENDIX A

Table 1 | Communication

Modality Speech Written Manual Signing Communicator

Function Textual Ideational Inter-Personal

Programs

Late Intermediate Language

Compound subject [illegible]
Compound predicate [illegible]
Compound sentences [illegible]
Third person indicative [illegible]
Tag questions [illegible]
Complex sentences [illegible]
Relative clauses [illegible]

Combined Function of Previous Programs

Early Intermediate Language

[illegible]

Function Personal Interactional Heuristic Imaginative Informative

Semantic Syntactic

Early Language

[illegible]

Instrumental Regulatory
Semantic Object Agent Location

Prelanguage

[illegible]

Early Conceptual Training

[illegible]

Assessment

Checklist
General Assessment Battery
Pretests

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Self Help			Domestic			and Communications Curriculum
Eating Skills	**Dressing Skills**	**Personal Hygiene Skills**	**Home Care Skills**	**Repair and Clothing Maintenance**	**Laundry Skills**	
	Coordinating clothing (See Communication Curriculum Late Intermediate)	Setting hair Shaving face (safety) Shaving face (electric) Shaving legs Shaving underarms Use of sanitary napkin Use of dental floss Use of mouthwash	* Vaccuming * Mopping * Bedmaking II	Ironing shirt Ironing jeans Use of iron on patches Ironing a flat piece	Use of Coin op dryer Coin op washer Automatic dryer Automatic washer	**Late Intermediate Language Program** **Academic Level III** **V.**
* Setting table		Cuticle care Filing fingernails Trimming fingernails Cleaning fingernails Complexion care Drying hair (blow dryer) Hairwashing (short hair) Hairwashing (long hair)	* Use of garbage disposal Dish drying * Dish washing * Toilet clean * Scour sinks * Clean windows * Clean mirrors	Mending a hem Mending seam by hand * Sewing on button No. 2 * Sewing on button No. 1 * Threading a needle	Hanging laundry Hand washing	**Early Intermediate Language Program** **Academic Level III** **IV.**
Cutting with knife Spreading with knife	The clothes fastening program Engaging zipper Shoe tying Fastening hooks - unhooking Buckling - unbuckling Snapping - unsnapping Zipping - unzipping Buttoning - unbuttoning	Use of stick deodorant Use of cream deodorant Use of spray deodorant Use of roll on deodorant Hairbrushing Washing Face, Neck and Ears Drying after shower Showering	* Emptying Trash * Sweeping * Dusting * Bedmaking I	Polishing shoes	Folding clothes Sorting clothes	**Early Language Program** **Academic Level II** **III.**
Use of napkin to wipe mouth Use of glass Use of spoon	Socks Coat Underpants Putting on pull over shirt	Toothbrushing (intensive) Toothbrushing Noseblowing * Adjust water to warm Handwashing		**Picture Reading:** * Obj-pic seq. (3) + action * Obj-pic seq. (2) + action * Obj-pic seq. * Obj-pic match		**Prelanguage Program** **Academic Level I** **II.**
Finger feeding Sucking through straw Chewing Lip closure Swallowing Sucking		Use of toilet tissue Toileting				**Early Conceptual Language Program** **Academic Level I** **I.**

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Table 2 | Survival Skills Curriculum

Cooking			Vocational		Concurrent Training from Academic and Communications Curriculum
Applied Cooking Skills	Branching Skills	Menu Planning & Grocery Shopping	Prevocational Skills	Vocational Skills	
Chili Macaroni & Cheese Fish Sticks * Scrambled Eggs * Pot Roast Chicken & Noodle Casserole * Hot Dogs Frozen Vegetables	Use of liquid measure cup Setting kitchen timer Use of dry measuring cups Use of measuring spoons	* Grocery shopping * Meal planning Dinner Lunch Breakfast		* Voltage regulator circuit board * Buffer board circuit board assembly * Potty alert system circuit board assembly	Late* Intermediate Language Program Academic Level III V.
* Fresh Vegetables * Frozen juice * Heating canned soup Heating canned main dish (spaghetti, stew, etc.) * Heating canned vegetables * Heating pork n beans * Instant cup of soup	Reheating leftovers Storage of leftovers Use of electric can opener Use of manual can opener	Use of stores (See Level III social skills Academic Curriculum)	* Erector set assembly * Tinkertoy train assembly	Electric motor assembly * Telephone receiver assembly * Faucet assembly Taillight assembly Use of screwdrivers Use of nut drivers	Early Intermediate Language Program Academic Level III IV.
* Peanut butter & jelly sandwich * Ice cream soda * Cold cereal * Buttered toast * [illegible] milk * Chocolate milk	Stirring Pouring		Tinkertoy assembly * Scooter No 2 assembly * Scooter No 1 assembly * Carframe assembly * Pipe assembly I & II Sorting by color Sorting by size	* Flashlight assembly Bicycle brake assembly Jar filling & sealing lid	Early Language Program Academic Level II III.
		Picture Reading * Obj pic seq (3) + action * Obj pic seq (2) + action * Obj pic seq * Obj pic match			Prelanguage Program Academic Level I II.
					Early Conceptual Language Program Academic Level I

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Arithmetic	Reading	Writing	Social Skills	Motor Skills	
Measurement Concepts Use of measuring spoons Use of measuring cups Use of liquid measures **Time Concepts** Calendar reading Days of week Months of year Time telling (regular clock) Time telling (digital clock) Scheduling events by time **Money Handling** Money identification Money counting Change making **Arithmetic Operation** Addition without carrying Addition with carrying Subtraction without borrowing Subtraction with borrowing	**Reading Comprehension** Response to questions (oral) Response to questions (written)	**Spelling** A [illegible] word spelling program	**Shopping** Identifying Source of Assistance Using aisle signs Seek assistance and following directions Refer to Grocery Shopping Survival Skills Curriculum Table Level V	**Strength and Endurance** Developing gross muscle force Developing gross muscle endurance Developing circulatory respiratory endurance	**Concurrent with:** Early and Late Intermediate Language Survival Skills Levels IV & V
Mechanical Arithmetic (Calculator) Match numbers Match symbols Enter single digit numbers Enter two digit numbers Enter three digit numbers Enter symbols Perform addition problems Perform subtraction problems **Counting Skills** Counting to specified number Counting from specified number to specified number Counting pictured objects (ordered objects) Counting pictured objects (disordered objects) Counting movable objects (ordered objects) Counting movable objects (disordered objects) Counting out member set from a larger set (ordered objects) Counting out member set from a larger set (disordered objects) Making and counting [illegible] **Numerical Set Skills** Matching identical sets (ordered objects) Matching identical sets (disordered objects) Selecting written numbers corresponding with set (ordered objects) Selecting written numbers corresponding with set (disordered objects) Selecting set corresponding with written number (ordered objects) Selecting set corresponding with written number (disordered objects) Selecting set corresponding with spoken number (ordered objects) Selecting set corresponding with spoken number (disordered objects) **Number Identification Skills** Written numeral matching Written numeral discrimination Reading written numerals Numeral sequencing	**Sight Word Recognition** [illegible] reading program Survival words & community signs **Name Recognition** Name matching Name discrimination **Letter Identification Skills** Written letter matching Written letter discrimination Reading written letters	**Typing** Letter matching Letter production with verbal cue Word matching Word production with verbal cue **Letter and Number Writing** Letter tracing Number tracing Letter production Number production Writing numbers [illegible] Name writing **Pre Writing** Tracing shapes [illegible] Tracing lines [illegible] [illegible] I want you to draw a straight line or else [illegible] Washington	**Participation in Activities** Participation in games Taking turns **Interaction with Others** Increasing peer interaction Making and interacting with friends	**Whole Body Movements (Object manipulation)** Throwing a ball Catching a ball [illegible] Kicking a ball Pushing a ball Pulling a wagon Lifting & carrying objects Bouncing a ball Hitting a ball [illegible] a ball Dodging a ball **Whole Body Movements (Locomotion)** Rolling Walking Crawling Climbing Running Jumping Hopping Skipping **Hand Movements** Cutting with scissors Building a block tower Putting together a puzzle Refer to [illegible] assembly Level [illegible] Survival Skills Curriculum Table	**Concurrent with:** Early and Early Intermediate Language Survival Skills Level III
Matching and Discrimination Skills Object to object matching Object discrimination Object to picture matching Picture to object matching Picture to picture matching Color matching Color discrimination **Orientation to Task** Visual tracking Eye contact Compliance Imitation	**Matching and Discrimination Skills** Object to object matching Object discrimination Object to picture matching Picture to object matching Picture to picture matching Picture discrimination Shape matching Shape discrimination Refer to Pre-Language Communication Curriculum Table Refer to [illegible] Assembly Level [illegible] Survival Skills Curriculum Table Refer to [illegible] Level [illegible] Survival Skills Curriculum Table **Orientation to Task** Visual tracking Eye contact Compliance Imitation	**Use of Writing Materials** Holding and marking with a pencil	**Respond to Others** Responding to name Eye contact	**Protective Extension** Arm extension on ball (prone) Arm extension from kneeling Arm extension from sitting **Equilibrium** Head and trunk righting on [illegible] Trunk righting on tilt board Head righting on tilt board **Sitting Balance** Indian sitting Side sitting Rising to sitting position from side lying Sitting in chair Kneel sitting Tilt board sitting [illegible] **Trunk Control** Trunk control kneeling Trunk control sitting **Head Control** Head control prone Head control supine Head control sitting Head control general	**Concurrent with:** Pre-Language and Early Conceptual Language Survival Skills Levels I & II

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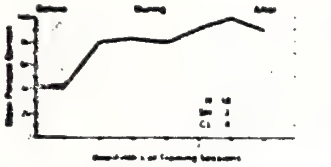
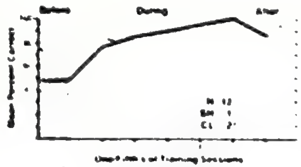
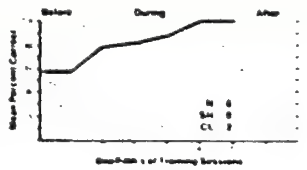


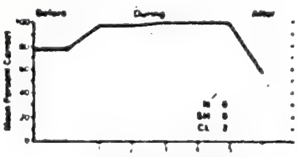
Can Opener (Electric)



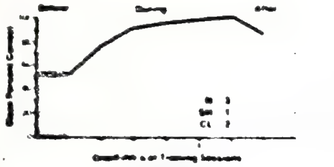
Heating Canned Food



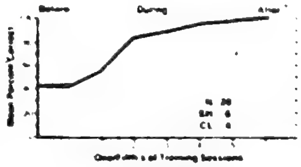
Frozen Juice



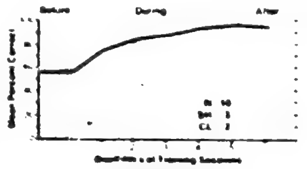
Use Of Measuring Spoons No. 1



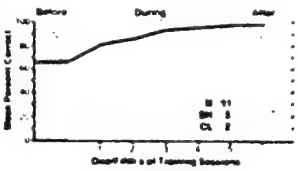
Scrambled Eggs



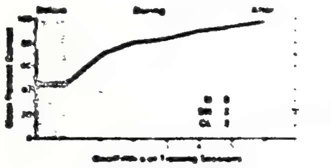
Brake Assembly



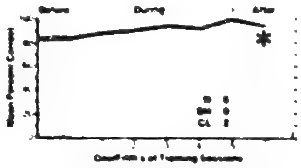
Flashlight Assembly



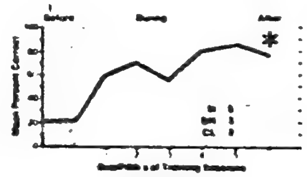
Tail Light Assembly



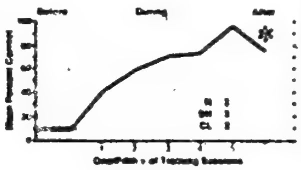
Potty Alert - Sorting Component



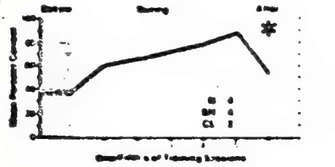
Voltage Regulator - Sorting Component



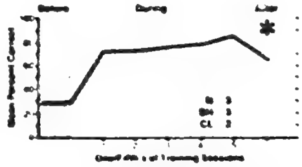
Use Of Scissors



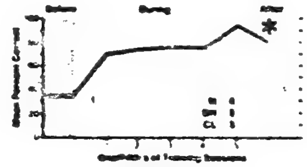
Picture Discrimination



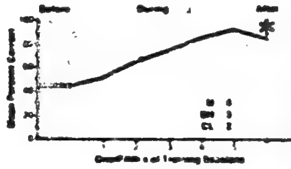
Color Discrimination



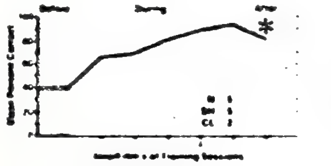
Number Discrimination (1-5)



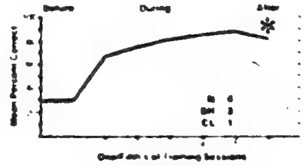
Number Match (1-5)



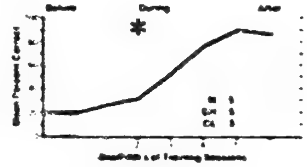
Pencil Holding



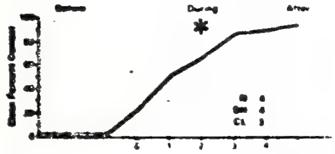
Name Recognition

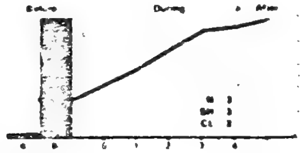


Coin Recognition



Object Matching

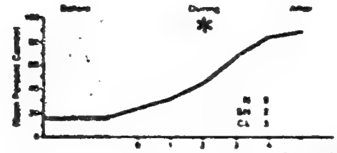


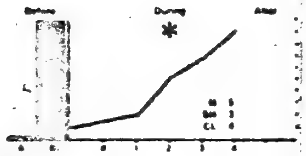


Temporal Delay (Seconds)

Function of Object Imitation

Function of Object Production

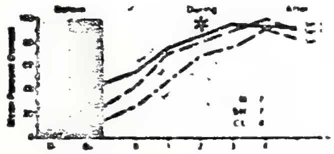


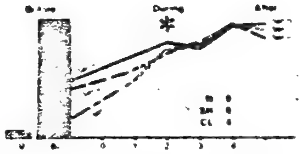


Temporal Delay (Seconds)

Noun Imitation

Noun Production

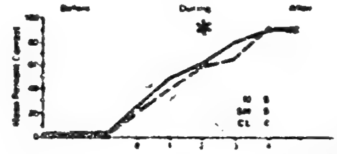


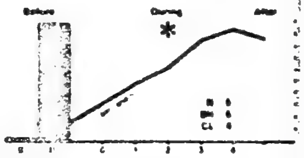


Temporal Delay (Seconds)

Sign Imitation - Nouns

Sign Production - Nouns

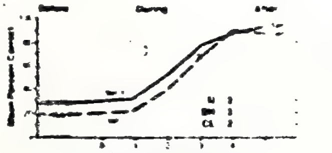




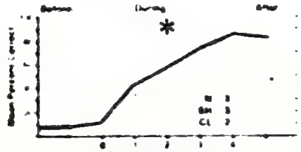
Temporal Delay (Seconds)

Sign Production - Verbs

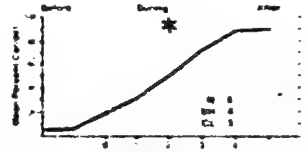
Sign Production - Noun-Verb/Verb-Noun



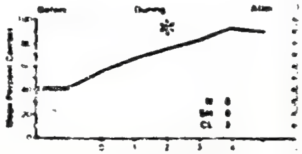
Object Discrimination



Noun Discrimination (Picture)



Verb Production



Plurality

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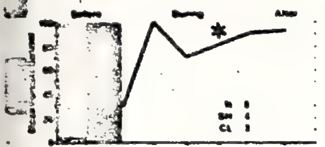
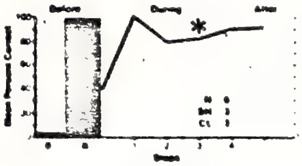
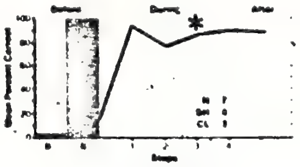


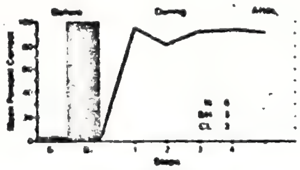
Noun-Verb/Verb-Noun



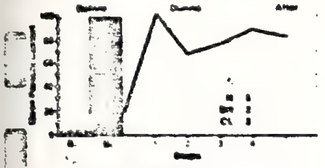
Noun Verb Noun



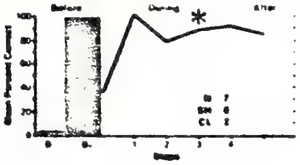
Noun Verb-Preposition Noun



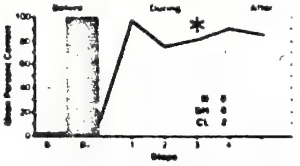
Noun-Verb-Modifier-Noun



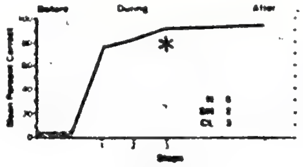
Noun-Verb-Preposition-Modifier-Noun



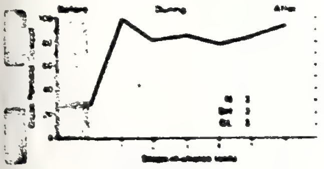
Verb Tense Training Regular & Irregular



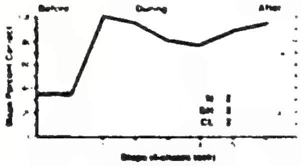
Noun Verb/Singular-Plural Agreement



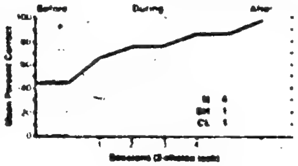
"Wh" Questions



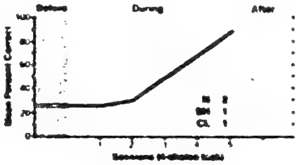
Written Communication (Noun Discrimination)



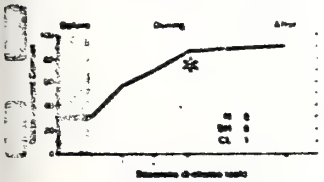
Written Word Discrimination With Picture Cue



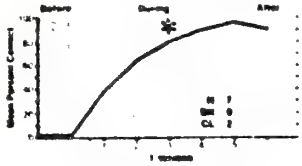
Objective Pronouns



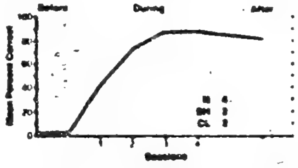
Size Discrimination



Verb Tense Discrimination



Verb [illegible] Questions



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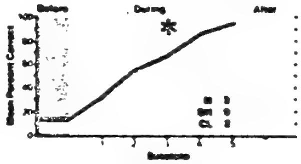

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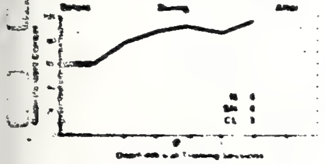
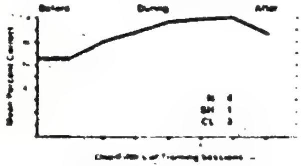
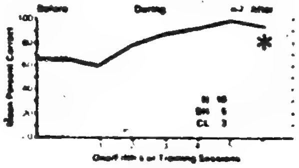


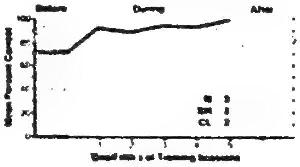
Picture Reading 3 Clip sequence action



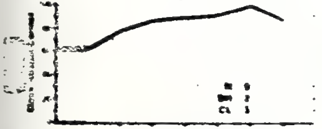
Toothbrushing



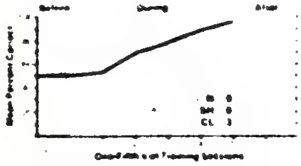
Handwashing



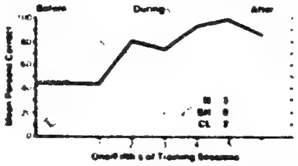
Hairbrushing



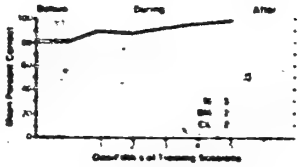
Washing Face, Neck, Ears



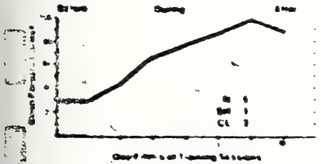
Showering



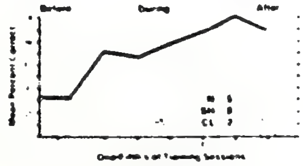
Hairwashing



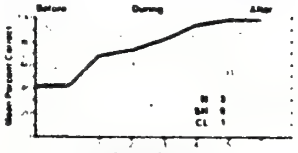
Roll On Deodorant



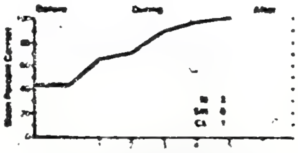
Dusting Furniture



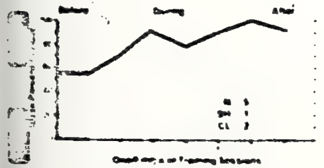
Sweeping Floor



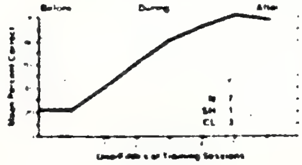
Bed Making No. 1



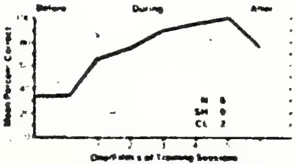
Vacuum Sweeper



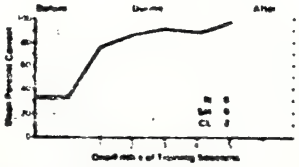
Window Cleaning



Scouring



Toilet Cleaning



Ironing Flat Pieces

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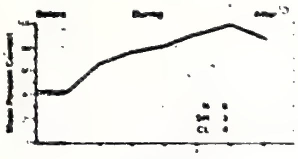
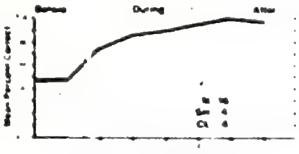
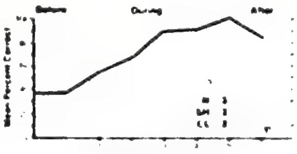


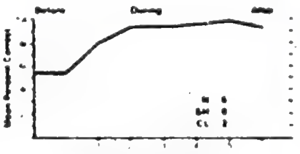
Chocolate Milk



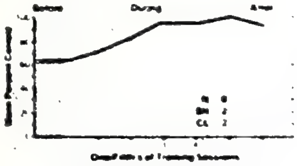
Buttered Toast



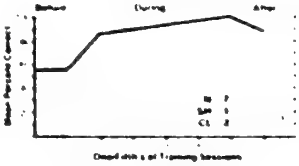
Cold Cereal



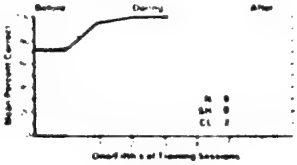
Ice Cream Soda



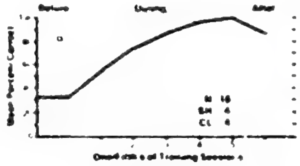
Sandwich: Peanut Butter & Jelly



Hot Dog



Instant Cup A Soup



Can Opener (Manual)

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METHODS AND TECHNIQUES OF BEHAVIORAL PROGRAMMING

PART A: The Process: Definitions and Applications

Mr. Anthony Antosh
Instructor of Special Education
Rhode Island College
Providence, Rhode Island

It's appropriate to note that this is supposed to be a workshop dealing with techniques of behavioral organization and behavioral programming. This is a difficult topic to discuss. Because the word "behavior" is included in the phrase "behavior modification" it is a term which is often not well understood and which often involves many, many misconceptions about many, many things. Everytime we present about behaviorism or about organization or about the severely handicapped or about how behaviorism applies to the education of the severely handicapped, the extent of the misconceptions becomes obvious. So, it is appropriate to have someone begin this workshop who looks at life from a rather simpleminded standpoint, who will look at behaviorism and behavior modification and how they relate to a total educational program for severely handicapped persons. This is my role in this context, to be the vague person who discusses philosophy and principle. After I finish discussing vagueness and philosophy, JoAnn Stillings will deal with these same principles in a more practical manner.

So let's begin very basically. What is behaviorism? As I ask people that, they tell me all kinds of things. Normally people tell me that behaviorism means M&Ms or reinforcements or time-out rooms. Then I ask what all these things are for, and people generally are not really sure. The point is that when people think of behaviorism or behavior modification, what they generally think of are the TECHNIQUES involved in the modification of behavior. DON'T CONFUSE THE TECHNIQUES WITH WHAT BEHAVIORISM REALLY IS. Behavior modification, in its simplest form, means two things. (1) A behavior is something you can see; a very specific, a very observeable skill or ability or action. A behavior is not making the kids feel good or improving their VPM skills, whatever they are. A behavior, be it a negative behavior or a positive behavior (We believe that positive behavior occurs ninety-nine per cent of the time.). . . a behavior is simply something you see, something observeable and measureable. (2) A modification is a change. So, anything that changes an observeable skill is a behavior modification program. Now think about what that means. People frequently orient themselves to the techniques, but that is not what behaviorism really is. What Lou Brown discussed yesterday was a very effective, a very practical way of teaching, and thus changing behavior. Behavior modification doesn't always have to be the "Look at me", "Good sitting, Johny" type. Behavior modification is whatever effectively changes behavior. If we remember that, rather than just the techniques in their formal sense, then we might use behaviorism a little more appropriately a little more often.

Having said that, let's briefly look at what behaviorism or behavior modification is based on.

$$S \longrightarrow R \longrightarrow S$$

Stimulus	Response	Consequence
Cue	Behavior	
Prompt	Skill	

Obviously you have all seen this model a thousand times. Something happens, a cue or prompt of some sort, which is the stimulus for a response or behavior or skill. The frequency or strength of that response, behavior or skill is determined by the consequence which follows the response. If the consequence is reinforcing in some manner, the response or behavior will increase in strength or frequency. If the consequence is non-reinforcing, that behavior will decrease in frequency. If the consequence is some form of punishment, the behavior will be temporarily inhibited. That's what the research seems to indicate. So, we are dealing with three things: a cue or prompt, an observeable skill or behavior, and some sort of consequence.

(Transparency A)

THREE COMPONENTS OF ANY BEHAVIORAL PROGRAM:

(1) THE BEHAVIOR MUST BE OBSERVEABLE . . .

(2) THERE MUST BE SOME FORM OF ENVIRONMENTAL MANIPULATION . . .

CONTROL OF CUES AND CONSEQUENCES

(3) THERE MUST BE A CONSISTENT METHOD OF RECORDING . . .

Using this as our basis, any behavioral program must essentially have three components. (1) First of all, you are dealing with a response. Your response or behavior must be observeable, must be a specific skill that can be described in observeable terms. It is extremely important that behaviors or skills be observeable because it is impossible to teach something well when you don't know what you're really and specifically trying to teach. For example, you've got this person in an institution who's nineteen and who has been banging his head since he was six months old. You tell me that you want to improve his behavior, but you probably never will because you are not dealing with a specific observeable thing. But, if you define the alternative to that behavior, which is simply keeping one's head still, and you write a specific objective for that and you teach that alternative; then your chances of accomplishing something will be greater because you are really teaching a specific constructive skill. The point is that you deal with specific skills that are observeable, the specificty will help you pinpoint what you really want to teach. Component number one, THE BEHAVIOR MUST BE OBSERVEABLE AND MEASUREABLE.

(2) Component number two, you must do something. This is the modification part. THERE MUST BE SOME FORM OF ENVIRONMENTAL MANIPULATION. That environmental manipulation is the control of the cues or prompts and the control of the consequences. Think about that. I knew a program once where the staff lined all the kids up against the wall on chairs and passed out M&Ms. When asked what they were doing or what their objective was, they reported that they were doing "behavior modification." However, they weren't really accomplishing much because they weren't dealing with any specific observeable skills and they weren't controlling any cues or prompts. All they were doing was passing out reinforcements. Environmental manipulation means the control of BOTH the cues and the consequences. You cannot give inconsistent cues and expect a consistent response to occur. You can't give consistent cues and no reinforcement and expect the response to be maintained. If you really want to teach effectively, you don't just think about M&Ms or just about reinforcement or just about what cues you are going to use; YOU MUST THINK ABOUT BOTH THINGS.

(3) EVERY BEHAVIORAL PROGRAM MUST HAVE A CONSISTENT MEANS OF RECORDING. I knew a nice little eight year old nonverbal spastic child once, who had been in a program to teach him "to talk" for five years. After five years he had learned to grunt for three seconds, a sound which doesn't come up in conversation too often. The point is that the staff didn't record, they didn't set themselves a time limit, they didn't stop to think about what they were doing because they never gave themselves a prompt on paper of a date when they were going to statistically evaluate if their procedure was really teaching this kid to talk. The reason we record is NOT to have notebooks to hand out to people who come to see your program; the real basic behavioral reason for recording is to determine if your environmental manipulation, your control of cues and consequences, is accomplishing what you want to accomplish, is teaching the observeable skill that you want to teach. Other than that recording has no meaning at all. If you are doing research in a lab, it does, true; but we're not talking about that. In a classroom the purpose of recording is to determine if your technique is doing what you want it to do.

That is a basic framework for describing what behaviorism is and what the components of every behavioral program should be. Now, we prefer to use behaviorism as an organizational process. I remember my first year of teaching. I had all these severely handicapped kids who I wanted to do everything for, but never did anything for because I was totally unorganized. I probably had the needed technical skills, but no one ever gave me a process for organizing. So when we talk about behaviorism, we take these three basic components and try to translate them into an organizational process. We call it "the process", isn't that creative? You can call it educational problem solving or anything else you wish. Too often, in dealing with the severely and profoundly handicapped, we think of them as the most deviant persons we know, especially since they differ so greatly from the norm. We sometimes think that the only way to deal with deviancy that great is to invent a deviantly complex process for treating it. What happens is that we invent all sorts of super complex

things which take so much time to plan and prepare that we never really accomplish much. But if we have a basic process and look at education from a simple organized standpoint, we would ultimately accomplish much much more.

(Transparency B)

BEHAVIORISM IS . . .

. . .

. . . AN ORGANIZATIONAL METHOD

1) ANALYSIS OF OBSERVEABLE EXPECTATIONS OF THE CONTEXT . . .

2) ORGANIZATION OF RESOURCES

METHODS

ENVIRONMENTAL MANIPULATIONS NEEDED TO ACHIEVE THE EXPECTATIONS OF THE CONTEXT . . .

4) CONSISTENT OBSERVEABLE MANNER OF DETERMINING IF THESE EXPECTATIONS ARE BEING MET IN THE MOST EFFICIENT MANNER . . .

So, to us, behaviorism is an organizational process involving three things. (1) You have to know your context. You have to know what the observeable expectations of the context are. Think about this. This strikes me as perhaps the most important thing. What does context mean? CONTEXT is THE places, THE things, THE school buses, THE houses, THE schools, THE street corner, THE institution, THE locked ward, THE locker room; ANYWHERE the person has to exist and has to function. Every context expects or demands certain observeable things. THOSE things, THOSE behaviors, THOSE skills are the things that are going to make that person, that typical severely handicapped person, function well in that context. Too often we say: "Gee whiz, here's a program that looks nice to me; I think I'll use this one." And we end up teaching twenty-eight year old profoundly retarded people to touch red or something like that. Now admittedly that's a skill, but it has nothing to do with their context. You can do all these simulated things in the classroom, then take the kid out on the street and he's just going to stand there because you haven't started with the context, the natural reality. So the first thing you have to do is determine the expectations of the context. (2) Then you organize, you use your basic control of cues and consequences and organize everything which is needed - people, resources, approaches, materials, space, time, and so on. You need to organize everything that you are going to do in order to make this person more independent in his context. (3) And component three is some consistent observeable manner of determining if the contextual expectations are being met in the most efficient manner.

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(Transparency C)

THE PROCESS

STEP 1 - BASELINE . . . ANALYSIS OF NEED OR CONTEXTUAL EXPECTATION

ANALYSIS OF PRESENT FUNCTIONING

STEP 2 - PINPOINTING PRIORITIES

STEP 3 - WRITING THE LONG TERM GOAL . . . DESCRIBING THE PRIORITY IN SPECIFIC OBSERVEABLE TERMS;

ANALYZING ALL COMPONENTS OF THE PRIORITY;

SEQUENCING THE PRIORITY.

STEP 4 - WRITING THE INSTRUCTIONAL OBJECTIVE AND INSTRUCTIONAL PROCEDURES . . .

WHO? WHAT? CRITERION? HOW? WHAT MATERIALS?

PRACTICE? GENERALIZATION? TIME?

STEP 5 - RECORDING . . . HAS IT WORKED? WHAT DO I DO NEXT? HOW DO I ADAPT IT?

Now we translate all of this into a five step process. We think this is the basis of life. If everything were approached from a simple organizational standpoint, using these five steps, we might possibly avoid a lot of the deviancies and a lot of the ineffectiveness which is now found in our programs. (1) STEP ONE in our process is that there has to be a BASELINE of some type. Oftentimes when we think about baselines or evaluations, we begin by thinking about IQ tests. Normally we take twenty-eight year old severely or profoundly retarded persons and give them an infant intelligence scale which has little interest or age appropriateness. This doesn't work, so we decide to give a social maturity scale. This tells us that the person has a developmental age of 2.3 months, and we say: "Oh boy, gee whiz." And so, but none of these things tell you much about what or how to teach. To us, baseline or evaluation means looking at the person's context and finding out what that context expects; then, looking at a very important thing, WHAT THE PERSON CAN DO IN RELATIONSHIP TO THOSE CONTEXTUAL EXPECTATIONS. You don't invent a program, you don't pick some model program and expect every person to go through it in the same manner. You analyze the context, all the contexts in which the person has to function, and you analyze what functional and observeable skills the person performs in that context. That's your starting point. The more functional and observeable your program is, the more functional abilities the person will learn.

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(2) STEP TWO. Ah! PINPOINTING PRIORITIES. Therein lies the problem. What does pinpointing priorities mean? Priorities are those things which we choose to be the basis of our program. It's interesting, if you go into most programs for the severely handicapped and ask people what they teach, they will generally tell you that they teach gross motor, fine motor, self care, language, and socialization. And if you watch, you'll find out that that is what most people teach - NO SPECIFIC SKILLS, but an awful lot of gross motor, fine motor, self care, language, and socialization. And people end up teaching the same things for a very long time because they are operating from the concept of a developmental norm that every person is supposed to progress through in the same manner and the same sequence. So, if a severely or profoundly retarded person is at the pre-reading stage which many are, this supposedly means that we teach him pre-reading skills forever even though he may not learn to read ever. Or the physically impaired person who is at the pre-walking stage, and so we assume that we must continue to try to teach him to walk forever. We often take this cross categorical, cross everything norm and apply it to everyone in the same manner. Think about this. The implication is that we are trying to teach everyone to achieve our own cultural, developmental and social standards. My point is that too often our priorities are oriented towards norms or standards rather than towards THE REAL NEEDS OF THE INDIVIDUAL FUNCTIONING WITHIN HIS CONTEXT. Those needs are the priorities, not the norm.

(Transparency D)

THE PRIORITY PINPOINT

DEVELOPMENTAL SEQUENCES
FUNCTIONAL ABILITIES

SHORT TERM
PHYSICAL POTENTIAL

LEARNING STYLE

FUNCTIONAL INDEPENDENCE WITHIN CHILD'S
ENVIRONMENT

DAILY ROUTINE	STAFF AVAILABLE	TIME FOR INDIVIDUAL ATTENTION	FACILITIES AVAILABLE
1. Bathing 2. Feeding 3. Dressing 4. Program } 5. Activity } time	1. Teachers 2. Assistants 3. Therapist 4. Doctor (Volunteer)	Professional Programming	1. Bldg. Space 2. Resources for Materials

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We call this little thing the PRIORITY PINPOINT. You look at developmental sequences for suggestions and the individual's functional abilities for more accurate suggestions; these tell you what the person can do. We also need to analyze how that person learns. I was in a classroom the other day in which a teacher was working with this guy who was about fourteen years old and spent about eighty per cent of his day self stimulating and the rest of the day sort of running down the corridor being chased by the staff. This teacher discovered that whenever she gave him verbal directions or yelled at him as he ran down the corridor, he supposedly ignored her and didn't attend at all. She also discovered that whenever she accompanied her verbal cues with a point or a gesture of some sort, then he stopped his self stimulating and did whatever she directed him to do. What she learned was his learning style, that he responded to visual cues; that whenever she used his most efficient input system, the type of cues he responded best to, then he learned. Whenever she used her learning style, which was auditory speech alone, he did not learn. So, one has to consider learning style as well.

Dealing further with priorities, one has to be practical. We need to look at all kinds of things. My first job working with severely handicapped people was in an institution with forty-four very severely handicapped persons of all types. In my rather naive manner I did two things. First, I bemoaned the evils of society for creating this situation and, second, I decided I was going to do everything for everybody immediately. And I tried that, probably really believing that I was going to cure all of them by the end of the month. And basically what happened was that I spent a year trying to cure them by the end of the month, but actually spent a year without teaching anybody anything. I complained about the context, but never approached it in an organized manner. Had I defined priorities, one priority per person, and worked out a practical time schedule, then I would have accomplished something rather than wasting a year. My point is that within your organizational schema, you must be practical. Look at how much space you have. Look at how much time you have. Look at how much staff you have. Look at what materials you have. Whatever you have, whatever practical constraints you are bound by should affect the definition of your priorities. Your program priorities, which are determined by all of these developmental and contextual demands, should also be determined by the practicalities. Don't plan more than you have time to do. The more practical you are, the greater are your chances of truly teaching. Step two, then, is to determine priorities, those abilities which can be practically taught and which will increase the person's functional independence in his context.

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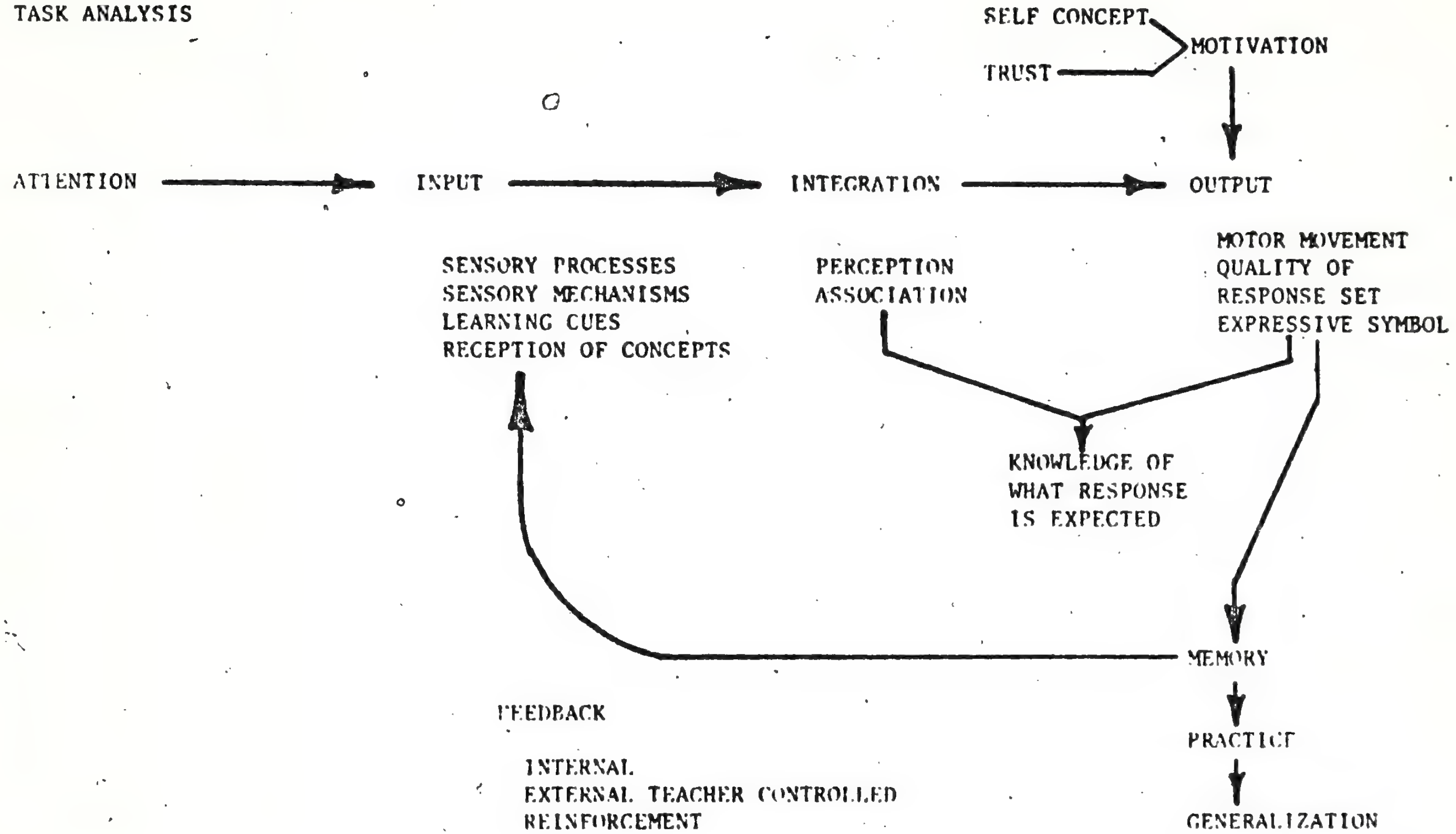
TASK ANALYSIS



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(3) The THIRD STEP in the process is WRITING THE LONG TERM GOAL. This is simply the description of the priority in specific observeable terms. To say that you want something to increase or to decrease or to improve does not really tell you what to teach or does not really tell the person what you expect him to do. Each priority must describe specifically and observeably. Each priority must be analyzed into its component parts and sequenced. Priority analysis refers to more than just the sequence of motor movements which comprise the task. Every analysis of every priority should include:

A) attention - an incoming stimuli cannot be effectively processed unless it is efficiently attended to. Attention, remember, involves more than just the eyes. It involves all senses and all parts of the body which are to be involved in the actual doing of the task.

B) input - the reception of sensory stimuli. In an instructional sequence, input refers to the cues or prompts.

C) integration - the perceptual and associational processes by which incoming stimuli are given meaning and translated into motor output.

D) output - the actual motor performance of the skill.

E) motivation - that which determines whether or not the person acts. We must remember that the individual can always choose not to act, not to perform the assigned task or activity. We can only be certain of performance, if we are certain of motivation. Motivation comes from many things: a history of success, trust of the instructor and of the learning environment, anticipation of reinforcement, affect, etc.

F) feedback - that which tells the person how accurate was his performance of the activity. In an instructional situation, feedback refers to the consequence.

G) strategies for memory - It is good to remember that skills performed and practiced in a variety of settings over a long period of time will be most remembered. Every skill should also be associated with a situation. This situation in its totality becomes a cue for remembering the skill. The initial situation can then be slowly and systematically generalized to other similar situations.

(4) The FOURTH STEP in the process is writing the INSTRUCTIONAL OBJECTIVE and the INSTRUCTIONAL PROCEDURES. Like the long term goal, the instructional objective should be stated specifically and observeably. The instructional objective is actually one step towards the long term goal, one part or approximation of the total skill to be learned. Each instructional objective should include the following:

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A) who - who will do the task; not the teacher, but the learner.

B) what - what the person is expected to do, described in specific observeable terms.

C) where - the context or situation in which the task or skill is to be performed.

D) criterion - that which tells you in observeable measureable terms that the person has learned this skill. Remember, as Lou Brown said, that your ultimate criterion is independent performance, without cues, in at least three different situations.

E) time - how long it will take you to reach this objective. Remember that the more specific your objective is, the easier it will be to teach. Instructional procedures refer to the environmental manipulation the control of cues and consequences, which enables the person to learn the skill.

(5) STEP FIVE in the process is RECORDING. This we have already discussed. Have my instructional procedures worked? Have they accomplished what they were supposed to accomplish? Has the person learned what I wanted him to learn? If he has, what do I do next? If he has not, how do I adapt my priorities, my objectives, or my procedures? Remember that for recording to be really useful, it has to be done consistently. Also, when you select a recording system, don't select a system that looks good in a notebook, but which you will never use. Select a system which meets your needs and which is simple enough and brief enough to insure it being used.

So the five steps in the process are (1) start with a baseline, analyze the expectations of the context and what the individual can do, how independent he is in that context; (2) pinpoint your priorities, remembering to be functional and practical; (3) write each priority in observeable, measureable terms and analyze it to be certain that you have included all pertinent components; (4) write your instructional objectives and your instructional procedures; and (5) record in a systematic manner to make sure that your instructional program is accomplishing what you intended it to accomplish. Two often we start with the activity, the page from the toy catalog, the model program rather than starting with the context and the needs of the individual in that context. Starting with the activity is inefficient and seldom teaches the severely handicapped person to be as independent as he needs to be. Using a process such as this will prevent this from occurring since it forces you to start with the context and the person. It's simple and it's common sense and it's basic, but it does work. This process can be applied to a number of educational situations - setting goals for a new program, for example, should be done after an analysis of need; organizing how an interdisciplinary team is to function can be done more efficiently if there are objectives around which to plan the activities of the team; and so on. Behaviorism, as an organizational process, does work.

One other thought . . . we've been using the phrase "severely and profoundly handicapped" a lot lately and it might be good to define it. A SEVERELY OR PROFOUNDLY HANDICAPPED PERSON IS AN INDIVIDUAL WHO DEMONSTRATES A SEVERE OR PROFOUND DEFICIT IN ADAPTIVE BEHAVIOR: RESULTING FROM INTELLECTUAL, MOTOR, SENSORY, EMOTIONAL OR MULTIHANDICAPS.

Ah! In this definition the emphasis is on adaptive behavior, functional ability. The AAMD defines ADAPTIVE BEHAVIOR as THE DEGREE OF EFFICIENCY WITH WHICH AN INDIVIDUAL MEETS THE DEMANDS OF PERSONAL INDEPENDENCE AND SOCIAL RESPONSIBILITY EXPECTED OF HIS AGE AND CULTURE. Now, think about what this means . . . age and culture. Is it appropriate to emphasize colors and shapes or "pre-reading" to a twenty-eight year old profoundly handicapped individual? Probably not. Is it necessary to teach a kid who has to live in an institution the manners he might need in a fancy restaurant or to teach him those many other things which are part of OUR cultural context, but not necessarily HIS? We have to look at the expectations and demands of the person's culture, not ours. People do not adapt to a culture which is alien to them. There has been some research recently comparing retarded persons who have successtully adapted to a community with those who have not. This research generally seems to indicate that both groups have the same degree of self care skills, the same degree of language, the same degree of vocational skill, and so on. What those who do not successfully adapt lack is: (1) appropriate social interaction ability (the capacity to come up and say, "Hi, how are you? rather than self-stimulating or withdrawing or performing any of those other behaviors which we permit because they're either cute or institutionalized); and (2) difficulty in learning from new situations. This is what Lou Brown was saying yesterday when he said that we teach a lot of very specific skills in response to a lot of very specific cues without ever generalizing them, but what we don't teach is how to learn about a new situation or a new context. That ability is what makes you independent.

If I put you in a new situation of some sort, you are not going to self stimulate, you are going to determine how to act in that new situation. But if you do not know how to adapt, you're not going to make it. This is what adaptive behavior really is and we should learn to deal with it on that level.

So whenever you are working on a program and people ask you what curriculum you use or what you teach, be sure to tell them that you start by knowing the contexts in which the person has to function. Each context should be analyzed and organized using the steps in the process. The point is simple - If you operate in an organized and efficient manner, your chances of succeeding and really teaching each individual will be much greater than if you operate in an unorganized manner. That's essentially what I wanted to say, JoAnn Stillings will progress onward.

METHODS AND TECHNIQUES OF BEHAVIORAL PROGRAMMING

PART B: Practical Application of Behavioral Programming

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My colleague spoke of age and cultural expectations within the context, and learning style as it applies to how an individual learns to adapt behaviorally. Let us consider some immediate illustrations of these factors:

Since Tony and I share the same office, it was my custom to refer to him as "my roommate". To the uninformed listener, this was cause for concern. Here is an obviously older female, inferring a casual, unorthodox relationship with a much younger male. Although mores have changed, considerably, in today's society, our culture is not yet comfortable with this particular combination! Thus, I quickly learned, from the startled glances, that I must adapt my verbal behavior -- and specify the relationship by stating, "my officemate".

We can also take the liberty of equating teaching-style in this presentation, with learning-style. Characteristically, my colleague presents in a constantly moving, acting-out-for-illustration, graphic overhead projections which outline and emphasize important points. On the other hand, my delivery is customarily based on a stationery point; the podium, depending on hand-outs, voice-emphasis and eye-contact to underscore important points. Together, we may provide the necessary variety to accommodate to individual learning styles. Individually or separately, we might need to adapt the delivery for specific learning styles.

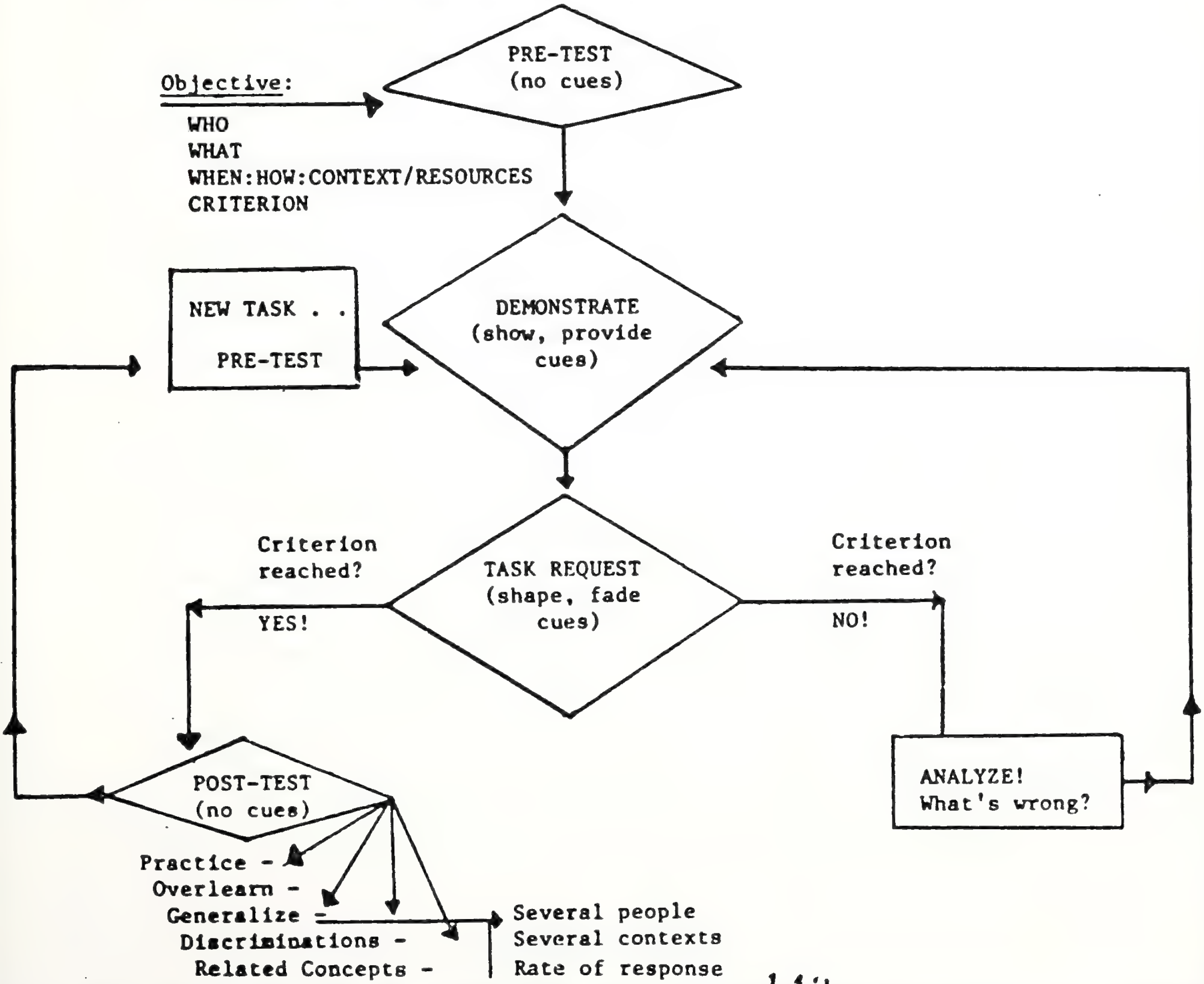
Many educators get very uncomfortable, when, in speaking about the teaching of specific tasks or skills, the emphasis is on process. They seem more interested in the content -- the WHAT. "Give me a book, a page, a program, a specific material. I am more comfortable with that. Where can I send? . . ."

There ARE many materials, many programs, many 'things to teach' being produced commercially, in spite of the fact that this area of teaching the severe and profound is fairly new! Basically, we find that teachers will pick up a curriculum, a program, or a package, and attempt to adjust their learners into ~~it~~. Thus, after a trial period -- there is disenchantment, apprehension, frustration for both teacher and learner. Things do not seem to happen. A year later, the objective is the same -- whether it be shoe-tying, or number recognition, or coin discrimination, and the search continues for the just-right material.

I am reminded of a reading series which was specifically planned for EMR students, several years ago. This was to be the magic pill. Each new vocabulary word appeared seven or eight times on the presentation page. I now see this particular series gathering dust in many classrooms, or relegated to the closet. WHY? Because the context-demands of the learner, particular learning-style, and the process of acquisition were not taken into consideration.

For purposes of illustration, I shall teach a specific concept. Since it is difficult to unlearn concepts which are already a part of one's repertoire, we shall communicate in a foreign language -- Lithuanian. The concept, you will acquire along with the learners; as they are taught. Please note the process which combines concept-teaching according to Becker, Engelmann, Thomas (1971) with the format of Systematic Instruction (Chalfant and Silikovitz: Tawney and Hipsher, 1972)

Handout: SYSTEMATIC, SEQUENTIAL INSTRUCTION



DEMONSTRATION:

Objective: Stated behaviorally.

1- The learner (WHO) will, on verbal command (WHEN) "Duok man balta", indicate by touching or pointing to (DO WHAT) a white object each time (CRITERION) he/she is asked.

2- The learner will respond verbally, "Balta" as he/she touches or points to a white object, each time teacher requests.

"Duok man balta" - "Give me the white one"; "Show me the white one"

"Sakik, 'Balta' = "Say, 'White'"

Context: 3 subjects from the audience; seated around a small table; teacher provides materials from a red purse.

Materials:

White string of beads	Red string of beads
White poker chips	Red poker chips
White golf ball	Red stapler
White cotton square	Red pen
White bottle cap	Red pad
White index card	Red scarf

Process: Please refer to hand-outs -- Systematic, Sequential Instruction
Instructional Analysis

AFTER THE DEMONSTRATION: Discussion -

- Note how gestural-language; voice inflection; facial expressions and the social context cued and shaped the learner.
- Note how teacher shaped the wanted behavior by cueing, shaping approximations, and positive and negative reinforcement.
- Note the degree of cueing, and the type of cueing/shaping which was needed for individual learners.
- Note how modeling on another's responses and approximations was used.
- Note how the opportunity to compare 'instance of concept' with 'non-instance of concept' facilitated a KNOWING of the concept.
- Note specifically, how a learner's spontaneous vocalization was used!

Often, in a language program, particularly when we are concentrating on a gross motor movement, we tend to zero-in on the specific concept

acquisition so intensely that we tend to ignore a spontaneous, seemingly irrelevant vocalization which might occur, THUS EXTINGUISHING that most wanted behavior - VERBALIZATION!

Subject C, in handing to me, the asked-for object, mouthed or lipped inaudibly, the word "baltas" (white). In my enthusiasm for the correct gross-motor response (give me), I might have ignored by not reinforcing the near-approximation. However -- by immediately noting and naming the spontaneous behavior, enthusiastic reinforcement, etc. we got not only the clear word from the initial subject; but we were able to then model and elicit a like response from yet another!

In summary, the process of acquisition must be carefully analyzed.

Handout: INSTRUCTIONAL ANALYSIS - The onus is on the teacher, wherever the failure.

BASELINE: Which areas need further exploration?
a. What does he KNOW?
b. What CAN he DO?
c. HOW does he respond?

OBJECTIVES: Is readiness being violated?
Are they learner-oriented?
Are they relevant? Realistic?
What is the "pay-off" for learner? teacher?

TASK: Analyze!!!
Are the steps finite; developmental; sequential?

TECHNIQUE: What are you doing? Why??
Shaping; prompting; chaining (backward/forward); fading

MATERIALS: Examine critically!
Age appropriate?
Culturally comfortable?
Stimulating?
Relevant?

ENVIRONMENT: Study objectively, with learner and learning style in mind.
What is learner able to do, that is not occurring?
What are demands?
What is interfering?
What needs change?
What people, things, places act as positive/negative consequences?

A final reminder, to paraphrase Burton Blatt: It is, perhaps WE who are retarded -- in that we have not been able to discover HOW learning occurs!

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DEVELOPING INDIVIDUALIZED EDUCATIONAL PLANS FOR SEVERELY HANDICAPPED LEARNERS: THE PROMISES AND THE PROBLEMS

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The development of individual educational plans (IEPs) is critical to the educational reform mandated by Public Law 94-142. IEPs establish the foundation for an information system which allows systematic planning and monitoring of individual student performance. They also provide an objective basis for allocating educational resources. With its statements of current functioning, goals, specific objectives, etc., the information system makes possible indepth, ongoing evaluation of educational service delivery components, which in turn, provides an empirical basis for the reorganization of educational systems.

In the past, educational planning has been difficult because of a general lack of information necessary for accurate decision making. Serious professional, legal, and fiscal obstacles have mitigated against the effective collection and use of educationally relevant information. Inter-disciplinary planning for individual students frequently has been incomplete with regard to the range of disciplines involved and the depth of the effort. P.L. 94-142 presents a provocative and much needed opportunity to progress beyond these constraints to a new level of detailed interdisciplinary planning for all handicapped students.

The IEP provides the instructional lattice on which assessment data, program objectives, service delivery, and evaluation can be woven into a comprehensive educational endeavor. The successful implementation of such an instructional lattice will require a significant modification in the perceived role of many professionals. Yet, because of its individualized approach, the IEP allows professionals to become less concerned with comparing students across normative levels and more concerned with comparing various instructional tactics in relation to prestated objectives. Crucial to this change is the shift in orientation from educational assessment as the determiner of disability category to the determiner of individual needs.

To gather information for decision making, educators historically have relied on a variety of testing procedures; some predictive, some projective, most comparative. Educators and parents alike have complained that culturally biased, normative scale dominated approaches used for making placement decisions were disjointed, irrelevant, counterproductive and inaccurate. With its requirement for statements of current performance and specific objectives, the IEP calls for significant change in assessment procedures.

This reorientation of assessment will require some substantial changes in the responsibilities of professionals. More than ever before, all professionals will have to forgo the isolation of their classrooms, clinics, laboratories, etc., and submit their detailed assessment findings and recommendations to the anvil of educational accountability. Professionals will have to arrest the desire to look upon findings as absolute and be prepared to defend their evaluation statements and summative projections.

These new responsibilities are not without their potential benefits. The inter-disciplinary Team required by P.L. 94-142 provides a vehicle through which many questions about the student can be answered. The Team is staffed so that it can perform a complete assessment. The assessment and planning process takes into account medical, intellectual, social, emotional, and educational aspects of the student's development. From the information collected, the Team can develop an individually appropriate educational plan with specific objectives. The entire effort is designed to shift the emphasis in educational planning from the categorical to the individual student.

The greatest potential advantage to the Team approach is the added information available for making decisions; what to teach, how to teach it, proper response to medical constraints, etc. In the past, special education professionals often encountered hostile supervisors and parents who expected individualized instructional programs based on records that seldom provided information sufficient to determine appropriate objectives/tactics. Usually, professionals receive little more than the non-specific results of standardized tests or a statement of an extremely general goal.

The Team approach to evaluation, detailing the student's current level of functioning and specific needs, will give each professional access to planning information and to those specialists who can provide either consulting or direct services. The assistance of these specialists and the availability of other required resources should allow each professional to concentrate on areas of expertise while participating in a more comprehensive service delivery program.

Although they offer many opportunities, IEPs also contain numerous potential pitfalls. If the IEP is too specific in regard to objectives, tactics, and service delivery, it may detract from innovation, creativeness and immediate situational leadership. IEPs may eliminate the spontaneity of instruction by making it impossible for teachers to shift objectives and tactics when student performance indicates a need for change. To limit teachers in their decision making regarding instructional tactics only invites bureaucratic policies and the frustrations that accompany them. Further, communications with parents may become confusingly injected with instructional specifics and due process jargon. However, if the IEP is too general to evaluate student progress and/or program effectiveness, it will weaken the efforts of school personnel to meet the individual student's needs.

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The greatest threat to the successful implementation of IEPs, however, is that they will become totally bogged down in bureaucratic paperwork. This paperwork often has little instructional relevance. The collection and recording of great amounts of unused information requires service deliverers to spend substantial amounts of time away from students and it involves considerable clerical support. More importantly, it breeds a careless atmosphere; so much information is required that the teacher's primary desire is to do it quickly rather than to do it well. These negative aspects result in a situation in which initially supportive staff become hostile to educational innovation.

If the IEP process is to be successful, the school system must recognize that it is responsible for coordinating various new tasks. These new tasks cannot be implemented by merely delegating them to existing individuals and organizational structures. IEPs are a new responsibility for most districts and, therefore, require new support structures. IEP team chairpeople, who are responsible for organizing the planning process, support personnel for teachers who have to leave their classrooms to attend planning meetings and building based inservice trainers are only some of the new roles required by the IEP process.

Although it requires considerable amounts of time and effort, the IEP process can provide potential benefits for both students and teachers. For the first time, there is a significant educational commitment to develop objectives and tactics specific to the individual student's needs. Education traditionally has attempted to fit everyone into the same model and thus, the resulting instructional tactics usually were not responsive to individual differences.

The IEP can provide school administrators and professionals with a tangible basis for making decisions and for evaluating progress. Also, for the first time, school administrators and professionls have a recognized procedure for the best opportunities for individual students to acquire skills, broaden their capabilities, and increase their life options.

Determining Current Levels of Performance

Planners responsible for determining appropriate services for severely handicapped students must establish a detailed planning process which allows for the development of a coordinated twenty-four hour school/residential program. The complexities of twenty-four hour service planning make necessary a procedure which can identify specific objectives, service deliverers, quantity of service, etc. Additionaly, as the planner identifies the details of the plan, it is essential th t the following four fundamental concepts continuously be monitored:

- * whole person planning - establish specific objectives and activities which relate to the student's overall physical, social, emotional, and intellectual development.

- intergrated/cooperative planning - all those involved with the students training should be involved in the planning process. A cooperative relationship should be established between the school and residence.

- minimum interruption of the rhythm of existing activities - those objectives or placements requiring major modification of existing schedules or procedures often result in the staff developing a negative orientation toward the student.

- cost effective delivery of the lowest possible level of sophistication - making the best allocation of resources by realizing that paraprofessionals can make major contributions toward the attainment of various objectives.

The assessment of severely handicapped students in Massachusetts follows the procedures required by the state's special education law, Chapter 766. The basic assessment components are:

- educational history and status - the appropriate school official provides a historical perspective, in narrative style, of the programs, services and objectives characterizing the student's education.

- medical examination - the purpose of this assessment is to determine and report any physical factors which may influence the student's performance. The summary report should delineate identifiable constraints on the student's performance.

  Specifically, the comprehensive health examination summary should consist of three major sections; a review of past and present medical problems, a physical examination and a statement of current health management activities. The review of past and present medical problems should consist of report of findings and the possible educational relevance of those findings. The physical examination section should cover all those areas that might have educational relevance. The medical report should indicate the physician's findings and their possible educational relevance. The health management section should summarize all forms of treatment which the student is presently undergoing. Information should be provided on the condition and the treatments frequency and effectiveness. Again, the report should indicate if any of the treatments have possible educational relevance.

- out of school performance - a social worker visits the parents (and with institutionalized students the responsible supervisor) to determine their attitudes and goals regarding the student. The information collected should also indicate how

the learner behaves in the home and relates to his peers and family. The information collected is divided into two major sections: one about the student (health, interaction with peers, developmental history, etc.), and the other about the child/family interaction (parental goals, home environment, etc.).

educational performance - indicates specific details regarding the students current level of functioning in the classroom setting.

The educational performance assessment has proven to be the critical source of planning information for most students. Because Chapter 766 requires specific statements of current performance as part of the education assessment, a number of difficulties have been encountered.

Historically special class placement has been based on disability category determined by a formal assessment device. Recently, however, many educators have questioned special class placement based on one formal test, especially when primary focus was given to intelligence score. In part, questioning occurred because many educators concluded that intelligence is a hypothetical construct rather than a concrete item (Throne 1972), and not open to direct observation and measurement (Robinson and Robinson 1965). Others have questioned whether intelligence tests can even measure present functioning, let alone intellectual potential. Throne (1972) suggests that intelligence tests be eliminated altogether and that educators concentrate on finding out how to produce "intelligent" behavior instead of attempting to predict "intelligence".

Formal tests have seldom provided the teacher with the type of detailed information required to develop meaningful educational programs (Hammill 1971). Barnes (1973) indicated that intelligence tests are useful for placing students into categorical groups but that they offer little aid in providing a basis for prescriptive teaching. There is substantial evidence to indicate that intelligence test scores of students with special needs have little relationship to actual performance (Albin 1973, Rammarauskat and Burrow 1973, Wolfensberger 1967). Many educators and parents, impatient with the controversy over intelligence tests, have demanded alternatives.

Although there is general agreement on the deficits of format tests, especially intelligence tests, there is little agreement on an alternative assessment approach. The recommendations include using a selected short-duration behavior sample assessed with a standardized device to provide information designed to answer specific questions (ITPA, WISC, etc.). Unfortunately, such a device, like the intelligence test, is based on a behavior sample that is not necessarily representative of the students actual abilities. The results often are not accurate because of the unusual environmental conditions in which the assessment occurs. These devices also are usually incapable of providing the specific information required to select individually appropriate objectives.

As an alternative, behavioral psychologists, supported by many special educators and parents, have attempted to develop systems for obtaining more precise descriptions of a student's level of functioning. The need for functional assessments which detail a student's strengths and weaknesses has become obvious as special educators have been required by the courts or State/Federal regulations to develop individually appropriate educational plans. Specific performance statements allow the teacher to prescribe appropriate instructional objectives/methods and materials, while at the same time facilitating communication among those responsible for the student's education (parents, teachers, administrators, etc.).

One svstem, intended to avoid the pitfalls of "representative" items, involves the assessment of all behaviors in the skill cluster about which the assessor has to make diagnostic statements, coupled with the basing of those statements on an extended observation period rather than a short behavior sample. The major drawback to this approach is the time one assessor would require to observe the student to ensure observation of all the behaviors under investigation (Lindsley 1970, Nunally 1964). One way to avoid this difficulty is to increase the number of observers and, thus, make it possible to collect the required information without one individual spending an extended period observing the student. The use of multi-observers also decreases the effect of biased reporting. However, this approach requires a format which will allow the various assessors to rapidly report performance about a wide variety of skill clusters.

One device commonly used in a multi-reporter, experience based assessment approach is the rating format. In this format all the behaviors or skills to be rated are listed and various performance categories, i.e., does all the time, does some of the time, etc. are checked. Early rating devices often were referred to as "scales"; they typically required raters to report on selected representative behaviors. Some of the rating scales frequently used with special needs learners are the Cain-Levine Social Competency Scale, the Vineland Social Maturity Scale, and the Haggerty-Olsen-Wickerman Rating Scale.

Generally, rating scales attempt to determine the learners behavior through an interview, conducted by an assessor, with an individual who knows the student well enough to report on the student's typical performance regarding each item. As previously stated, the nature of the items usually require that the rater have had opportunities to observe the child in various situations (Freeman 1962). Since these scales generally rely on selected representative items to assess behavior clusters, they have some of the same drawbacks as standardized tests.

Due to the need to have specific statements of current performance, many Massachusetts Teams have adopted a checklist device developed by a special project of the Massachusetts Department of Education. The Educational Evaluation and Planning Package, concentrates on six skill areas (ADL, motor, early language, socialization, advanced language and mathematics). Each skill area is divided into three components; a screening device, performance statements (a developmental list of specific skills)

and a next step chart (a gross arrangement of skills to facilitate the development of a ten month educational plan).

Initially, the teacher selects those skill areas applicable to the specific student (for example, ADL, motor development, early language) and eliminates those not applicable (for example, advanced language, mathematics, vocational). Next, the teacher uses the screening device (Figure 1) for each skill group and pinpoints those skill clusters that require detailed assessment. Once target clusters are pinpointed, the reporter/assessor reviews the specific statements in those clusters indicating the student's level of performance based on observation and, if necessary, performs an in-situ evaluation of particular skill. Figure 2 shows a possible scoring of the "puts on indoor/outdoor clothes" skill cluster.

Performance terms provide a basis for common communication among team members and for later analyzing the learner's progress. The various other performance variables collected during the assessment process also can provide an excellent basis for identifying the best learning environment, teaching tactics and instructional materials. In this way, the assessment provides the information which will be essential to the educational planning and implementation process.

By using the checklists, the assessor can report the results of the assessment in terms of performance. If discrepancies are found or a need for more information is identified, the psychologist/coordinator of assessments meets with the student and assesses any unclear skill areas. After the various assessments are performed, the psychologist goes through all the reports to develop a "coordination of assessments" report. The psychologist also examines the assessments for potential gaps, conflicts and areas requiring assessments by specialists. When all the information is available, the Team meets to begin developing the educational plan.

FIGURE 1. Screening device for the dressing sub-skill area.

Screening Assessment

Each part of the screening device corresponds to a cluster of performance statements; the underlined words in the section indicate a cluster name. The statements (1.2, 3.3, etc.) have been selected as representative of the cluster. Within each part, check "yes" if the student displays the skill at appropriate times and places and without assistance; check "no" if any aspect of the student's performance does not meet those criteria. The evaluator should complete the entire screening device.

In cases where all responses on the screening device are "yes" the screening device can serve as the complete ADL evaluation. If any section has one or more "no" responses, the chairperson should provide the evaluator with the performance statements for that section. The evaluator should complete the performance statements and return them to the chairperson.

Figure 1 continued.

1.0 DRESSING

1.1 Takes off indoor/outdoor clothes appropriately and without assistance.

yes	no	
☐	☐	takes off underwear
☐	☐	takes off pants or dress
☐	☐	takes off shirt, blouse
☐	☐	takes off shoes
☐	☐	takes off coat or sweater

1.2 Puts on indoor/outdoor clothing appropriately and without assistance.

☐	☐	puts on underwear
☐	☐	puts on pants or dress
☐	☐	puts on shirt, blouse
☐	☐	puts on shoes
☐	☐	puts on coat or sweater

1.3 Performs fastening skills appropriately and without assistance.

☐	☐	zips jacket
☐	☐	puts on pullover clothes
☐	☐	buttons buttons
☐	☐	assembles hook and eye
☐	☐	ties simple bow

1.4 Performs simple clothing care skills appropriately and without assistance.

☐	☐	folds clothes
☐	☐	picks out dirty clothes
☐	☐	picks out damaged clothes

Figure 1 continued.

☐ ☐ makes minor repairs of clothes

1.5 Performs selection of clothing without assistance.

☐ ☐ picks out matching shoes

☐ ☐ picks out own clothing

☐ ☐ picks out weather-appropriate clothing

☐ ☐ picks out coordinated outfits

2.0 EATING

2.1 Performs skills necessary to be fed by others

☐ ☐ drinks liquids (if fed)

☐ ☐ eats solids (if fed)

2.2 Performs skills necessary to eat independently

☐ ☐ drinks liquids with a spoon

☐ ☐ drinks from a glass

☐ ☐ eats with a fork

☐ ☐ cuts with a knife

2.3 Performs skills necessary to eat independently in public places appropriately and without assistance.

☐ ☐ uses salt and pepper shakers

FIGURE 2. Sample scoring for a dressing skill cluster

SKILL: Activities of Daily Living SUB-SKILL: Dressing (1.0)

SKILL STATEMENT	CATEGORIES OF PERFORMANCE												CLUSTER: Takes off indoor/outdoor clothing (1.1)
	Performs appropriately without assistance	Performs in the following manner							type of intervention required			Unobserved/not applicable	Comment: Special Equipment Elaboration of Categories Checked
		type/level of assistance				parameters							
		verbal	physical	individual	small group	duration	setting	frequency	motor	cognitive	social		
extends arms to assist													
extends feet to assist													
takes off coat													
takes off hat													
takes off scarf													
takes off mittens													
takes off gloves													
takes off sweater (open)													
takes off pullover													
takes off shirt/blouse													
takes off pants													
takes off skirt													
takes off dress													
takes off socks													
takes off shoes-slippers													
takes off underpants													
takes off undershirt													
takes off slip													
takes off nightclothes													
takes off boots													
takes off bathing suit													
takes off tights													
takes off bra													
takes off sanitary belt													

Developing the Educational Plan

The written educational plan represents the culmination of the planning process. Once the plan is developed, indicating instructional goals, objectives, etc., the responsibility falls to the school representatives to allocate the required resources, to the parents to react to the completed form, and to the service deliverers to implement the plan, and to the liaison person to monitor performance. Aside from those instructional aspects, the plan is used for numerous administrative purposes, including the protection of due process rights, fiscal audits, program audits, reports to SEA personnel, etc. In essence, the educational plan is the foundation for all services to the student.

Using the IEP to provide information in all these areas presents a major obstable to the development of a viable educational plan format. That is, the need to provide so many different types of information to meet requirements of numerous audiences (parents, lawyers, teachers, administrators, specialists, SEA staff, etc.) can result in a totally unmanageable plan format.

P.L. 94-142 outlines the educational plan as an instructional document with goals, objectives, learning style, etc. If the format is to reflect this orientation, its design must allow for the clear communication of the information derived from the assessment process to all of those working with the student (parents, teachers, specialists, etc.). To do this, the format must avoid the use of legalistic, psychological, and educational jargon. It should concentrate on providing clear statements regarding the student's behavior.

A critical issue in the IEP development concerns the scope of the plan as a whole and the scope of each component. This issue deals mainly with the specificity of the plan. There are advantages and disadvantages to both being extremely specific or to being relatively vague. Planners should be aware of the ramifications of each choice especially in regard to the time required to complete the plan and its usefulness to the service deliverers.

To demonstrate some of the various advantages and disadvantages of IEP forms, the Massachusetts form and a form proposed by NASDSE are used as examples. The Massachusetts Education Plan provides an example of a planning document covering a complete school year. Although similar to P.L. 94-142 with regard to plan development, the Massachusetts Special Education Law, Chapter 766, does have some significant differences. Most significantly, non-categorical individual plans are developed for all referred students. The determination of special needs is based on the services required to meet the plans objectives not the assessment results as in P.L. 94-142. After the local special education administrator determines placement of each objective and whether it is to be met in regular or special education, the parents then respond to the proposed objectives and placement(s).

The major elements of Massachusetts plan (Figure 3) are:

1. situational information, name of student, address, team participants, period covered by the plan, etc.

2. general objectives (annual goals): What are the long term goals (one year) for the student? These goals, based on assessment results, should be developmentally rational, reflect parental priorities and aim for the student's movement to a less restrictive environment. Each goal should be prioritized to provide a basis for trade off decisions if they become necessary.

3. learning style/physical constraints: Suggested instructional information which if known by service deliverers would enhance the student's attainment of objectives. Information such as recommended instructional strategies (behavior modification, play centered, etc.) and tactics (reinforcement preferences, attention span, interest areas, etc.). Any physical/medical constraints (including effects of medication) also should be provided when they have possible instructional ramifications. Summaries of assessment results should be attached to the plan.

4. specific objectives: What are the instructional objectives for the student? The objectives should reflect the various goal statements and should be coded so that it is possible to easily match objectives to their parent goals. Objectives should be stated in terms of measurable terminal behaviors.

5. objective implementation information: the team should indicate, by quarter, when an objective should be undertaken. The team has to develop objectives that cover the student's annual educational program. Many systems modify the form to use school quarters rather than three month quarters. Some communities use records for the amount of time (per week) that will be devoted to each objective. Also indicated, is the size of the instructional group in which the student will demonstrate the objective.

6. recommendations of the Special Education Administrator: The administrator must indicate the type of program (regular/special) in which the objective will be implemented. If the service is part of the regular education program, the administrator only indicates the recommended start date (this must be later verified by the building principal). If the service is to be delivered as part of the special education program, the administrator must indicate the start date, service provider and service location.

7. additional information: The administrator should list any information not otherwise recorded on the plan which is relevant to program implementation (unusual daily program duration, unique scheduling of services, etc.).

8. criteria for movement to next less restrictive environment: What is the next less restrictive instructional environment and what behaviors must the student exhibit to move to that environment. When appropriate, this section should indicate what impact attainment of the plan's objectives will have on placement. This section also indicates if the student's movement to that environment may be prevented by items unrelated to the student's behavior (no wheelchair ramps, inappropriate transportant, etc.).

9. describes student's transportation plan: If the student requires special transportation, the administrator should indicate type of vehicle, time/length of travel and if any support personnel (in addition to the driver) will be required.

10. designated liaison person: The administrator in collaboration with the team should record the name and position of the person designated to monitor the student's progress and to oversee regular reviews of the program.

11. certification of appropriate program local: The special education administrator certifies that special education services will be delivered by special education staff; the principal certifies that regular education services will be delivered by building staff and if necessary the head of any outside facility (school, hospital, etc.) certifies that it can deliver the indicated services.

12. parents response to the plan: The parents indicate their acceptance or rejection of the plan, along with any appropriate comments.

FIGURE 3

Page 1 of ___

Identification
# CX 103

School West Elementary

Type of Evaluation Full

EDUCATIONAL PLAN:
GENERAL AND SPECIFIC OBJECTIVES/DELIVERY OF SERVICES

1. **Name** Jane Doe **Date of Birth** 8-30-65

Address 36 Blaken Road **City** Rochester, MA

2. **Participants:**

Name	Position	Name	Position
Robert Johnson	Teacher	David Roberts	Spec. Admin
Bill Williams	Rehab Specialist		
Mr.& Mrs. Doe	Parents		
Ruth Jackson	Principal (chairperson)		

3. This Educational Plan covers the period 3 Sept 75 to 7 Sept 76

4. *General Objectives:*

Based on the various demonstrated performances as indicated by the assessments, what are the general long term (one year) objectives for the student?

Pri. No	
1	Acquire independence in self-care
2	Orally communicate basic needs
3	Acquire pre-academic skills
4	Develop situationally appripriate behavior in social settings
5	Improve gross (mobility) and fine (hand-eye) motor skills

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Attach extra sheet if necessary

Page 2 of ___

Learning Style/Physical Constraints
Provide information relevant to the instruction and attainment of objectives.

This learner generally needs a one to one instructional setting although is able to work in small groups when working on familiar tasks, has good receptive language and is usually able to follow 3 step commands. Has difficulty in processing cluttered visual materials. Expresses self mainly through gestures. Works well for social praise and has participated in a token economy. Tends to stop attending to task after three or four consecutive incorrect responses. When working on new tasks requires one to one is quiet area. Can work independently for up to twenty minutes in familiar tasks.

Receives medication for thyroid at noon. No motor constraints although slow to regain walking skills after recently breaking leg in climbing accident.

Attach extra sheet if necessary.

6.1 6.2

CORE EVALUATION TEAM								
Pri. No.	Spec. Obj. #	Specific Objectives	Quarters (12 Mo./Yr.): i.e., 3 Mo. intervals				Class	Small Group	Indivi-dual
1		Self Care							
1	1	Zips appropriately and without assistance front one piece zippers	*					*	*
1	2	Buttons without assistance-front buttons	*	*					*
1	3	Puts clothes on right side out without assistance	*	*	*			*	

8.1 8.2 8.3

ADMINISTRATOR OF SPECIAL ED/DESIGNEE				
Prog.		Start Date Mo./Day Yr.	Service	
Reg.	Spec		Provider	Location
	*	3 Sept	Mr. Johnson teacher	West Elementary 1492 Columbus Road Rochester, MA
	*	3 Sept	teacher	school
	*	3 Sept	teacher	school

6.1 6.2 8.1 8.2 8.3 Page___of ___

CORE EVALUATION TEAM

Pri. No.	Spec. Obj. #	Specific Objectives	Quarters (12 Mo./Yr.) i.e., 3 Mo. intervals				Class	Small Group	Individual
5	13	Walks down stairs two feet to a step	*	*					*
5	14	Walks down stairs alternating feet one to a step		*	*				*
5	15	Hold crayon/pencil appropriately	*	*				*	*
5	16	Scribbles/colors within defines areas on paper		*	*			*	*

ADMINISTRATOR OF SPECIAL ED./DESIGNEE

Prog.		Start Date Mo./Day Yr.	Service	
Reg.	Spec		Provider	Location
	*	3 Sept	Mr. Williams Rehab. Special.	School
	*	11 Nov	Teacher	School
	*	3 Sept	Teacher	School
	*	11 Nov	Teacher	School

7. Participants (Signatures)·

Ruth Jackson	Principal
Bill Williams	Rehab. Specialist
Robert Johoson	Teacher
David [illegible]	Sped. Administ.

9. Additional information: work on objectives will continue during the summer at Rochester Day Camp.

10. Program Prototype: Substantially Separate

11. Criteria (demonstrated skills) for student's movement to next less restrictive program prototype.

"Regular education with not more than 60% special services".
in the next least restrictive. Ability to participate in and benefit from structured group activities, put on and remove outside clothes without assistance verbally indicate needs, climbs and descend stairs, eliminate all sterotyped behavior.

12. Describe this student's transportation plan.

ride the school bus with peers

13. Designated liaison person. Name: Mr. Robert Johnson

Position: Teacher, West Elementary School

14. If placement outside the LEA is recommended complete the following:

I certify that the (facility) ____________________ is able to provide the services required by this plan.

Signature ______________________________ Date ____________
(Director of Accepting Facility)

15. I certify that the above objectives are those recommended by the core evaluation team, and that the above indicated services will be provided.

Signature David Roberts Date 10 August 1975
(Special Education Admin./Designee)

16. I certify that the above objectives are those recommended by the core evaluation team, and that the above indicated services will be provided.

Signature Ruth Jackson Date 15 August 1975
(Building Principal)

17. Response of Parents/Guardian/Student:

a. ☐ I accept the educational plan outlined above.

b. ☐ I DO NOT accept the educational plan outlined above.

c. Comments: ______________________________

______________________________ Date ____________

I understand that I may seek a second opinion or independent evaluation as provided in the Chapter 766 regulations.

Signature ______________________________
(Parent/Guardian/Student)

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The Massachusetts form reflects a behavioral interpretation of the complex *Chapter 766 Regulations* (1975). The format requires specific behavioral statements regarding assessment data, objectives, movement to less restrictive environments, etc. This behavioral specificity requires retraining of many special education service deliverers. Few special education service deliverers have been required (or taught) to think in terms of specific measurable behaviors. Due to this situation, a plan requiring specific behavioral statements initially meets with substantial hostility. Overcoming such hostility, as well as developing meaningful educational plans, requires a substantial, long term commitment to intensive inservice projects.

Another important aspect of the Massachusetts plan is that despite its specifics, it does not require detailed implementation information, i.e., task analysis, strategies or techniques, mastery level, etc. This aspect has been viewed as both beneficial and detrimental. Some believe that it leaves the service deliverers freedom to use their skills; other believe it leaves the teacher with most of the work and all of the accountability.

The IEP format and process presented in *Functions of the Placement Committee in Special Education: A Resource Manual* (NASDSE 1976) differ significantly from those of Massachusetts. That process starts with a determination of eligibility for placement based on a review of assessment results. Once eligibility is established, a two level IEP is developed. The team develops a Total Service Plan (which is comperable to the complete Massachusetts Plan), after which specific individuals complete an Individual Implementation Plan.

The Total Service Plan consists of the following elements:

- current performance
- long term goals
- short term objectives
- specific education and/or support services
- service deliverer for each objective
- percentage of time in regular classroom (for each objective)
- start/end date for each objective
- evaluation criteria for each objective
- recommendation for materials, techniques, learning style, etc.

Each of these elements requires basically the same information as required on the Massachusetts plan.

The Individual Implementation Plan details how each objective will be achieved (information not required in the Massachusetts plan). This section requires the following information for each objective:

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. behavioral objective
. task analysis
. for each step mastery criteria
. strategy and technique for each step
. materials required for each step
. start/stop date for each step

On this sheet, the service deliverer must identify and detail the strategies and tactics that will be used to obtain each objective. Milestones relating to the achievement of that objective must also be identified and accompanied by dates for beginning and accomplishing each step.

As previously stated, the Individual Implementation Plan is completed by specific service deliverers. This documentation requires such detail that substantial time needs to be set aside for completing this plan. Because of the limited ability to foresee acquisition rates, such detail is probably only useful for planning and probably only applicable for plans covering two or three months.

The requirement for such a detailed presentation of strategy and tactics must be accompanied by a system for analysis. Such a staggering amount of information could only be analyzed by a computer. Specifically, it is important to avoid concentrating on collected cabinets of input data unless it can be correlated and analyzed with output variables.

Summary

Although it requires considerable investment of time and effort, the IEP process has many potential benefits for severely handicapped learners and their teachers. The process provides the information necessary to meet the program planning, implementation and review elements required by P.L. 94-142, while at the same time, it encourages the development of interdisciplinary cooperation and coordination necessary to meet the needs of this group of very special learners.

In conclusion, P.L. 94-142 with its requirements for educational plans, provides a basis for the reconceptualization of our present public school system necessary for the successful implementation of a zero reject model. This is the beginning of a system which will be refined by experience. It is an accountable system, and it can provide for movement towards a broader range of life options for all severely handicapped students. The IEP process also can provide our educational system with exciting new opportunities to serve all children better. It is a beginning point, one that is hopeful and energetic, it allows parents and educators to work together in developing and refining our capabilities to best serve children.

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COMMUNICATION METHODS FOR NONVERBAL CHILDREN[1]

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Communication deficits among severely handicapped children has long been recognized as a critical area of concern. Almost always a direct correlation exists between a child's language capabilities and his/her eventual classification or diagnosis: The poorer his communication skills, the more debilitating his condition is considered to be. A fundamental goal, then, has been to develop intervention strategies that establish rudimentary communication patterns in severely language delayed children.

Language researchers, psychologists, special education teachers, child developmentalists, and others have been trying to find the most efficient ways to teach severely handicapped children to use speech functionally. Some of their efforts have failed completely, but others have shown considerable potential for teaching basic language skills. These early successes generated additional research and new theories of language development--both in normal and delayed children. Some theorists have maintained that a language-intervention program must be based on a sequence closely following normal children's development. Other theorists believed that communication skills should be taught in a curriculum that is most functional for the prospective language user, whether or not it conforms to a normal developmental sequence. The arguments posed by each side are complex, and are receiving considerable attention in the professional literature. It is not within the scope of this presentation to elaborate on them here. Instead, emphasis will be placed on a learning theory account of language mediation. This account places special emphasis on the role of imitation and reinforcement in the intervention process.

Many of the existing intervention strategies divide language learning into, at least, two general phases. One phase teaches behaviors that are considered to be prerequisite, or important, for functional language acquisition to occur. The other phase teaches the symbolic, or functional, aspects of language such as semantics, syntax, and morphology. Section III of this presentation will discuss language prerequisites; Section IV will discuss several curricula to teach functional language. Particularly, the work of Drs. Doug Guess, Wayne Sailor, and Donald M. Baer at the Kansas Neurological Institute and the University of Kansas will be highlighted.

Prior to implementing any language training, however, it is necessary to thoroughly and accurately assess the existing level of a candidate's language repertoire. Section II will describe some of the assessment procedures used in the experimental language program at the Kansas Neurological Institute. The importance of this assessment process cannot be overemphasized. Not only does it help to determine where the logical

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starting point should be for a particular child, but in addition, the proper assessment method will also help to determine if the training program that is eventually used is working. In fact, ongoing assessment procedures should be an integral part of any training strategy. The language teacher cannot assume that a particular program works for all children simply because it has worked for one child, or, because it has been offered in published form. Too many variables are operating in the language acquisition process, any one of which could be responsible for failure. Thus, at least, three measurement and assessment schemes should be incorporated as part of the overall intervention strategy: (1) Initial Assessment; (2) Daily Data Collection; and (3) Post Tests (simple repetitions of the initial assessment).

II. Measurement and Assessment

Each candidate who enters the Guess, Sailor, and Baer experimental language program is given a battery of initial assessments. Some of them are given once; others are systematically repeated throughout training. It should be emphasized that the KNI language training program is data based and research oriented. Because of this characteristic, more rigorous documentation (of success or failure) is required than might be the case otherwise. For example, the ability of a child to attend to the language teacher is assessed in relation to the child's ability to imitate. Specifically, the child is given an imitation pretest that includes responses such as touch table, touch chest, saying /ba/,/ow/, /ka/, etc. After this test is given, the child begins in an attention training program. This training requires that the child look into the face of the language teacher for a few seconds each time the request "Look at me" is given. Upon reaching a predetermined criterion for attentiveness, the imitation pretest is readministered. The purpose of this assessment sequence is to determine whether or not teaching the child to attend influences his ability to imitate the vocal and/or the motor demonstrations of the teacher. A language teacher at other remedial centers may or may not want to conduct this same kind of analysis, depending on the goals of the particular program, and the number of "research-type" questions to be asked.

The sequence of pretraining assessments given at the Kansas Neurological Institute's language program is described below:

1. Descriptive Information and Characteristics of the Child

The information gathered at this initial point pertains to a variety of behavioral parameters and characteristics typically used in describing a child. Included are the child's age (CA); sex; level of measured intelligence (MI); mental age (MA); diagnostic classification (if known); etiology (if known); identified sensory or physical anomalies (including EEG findings if available); and, any observed behavioral problems that might interfere with training (e.g., self-destructive behavior, agressiveness, hyperactivity, etc.). Other information considered to be important should also be included.

2. Neurological Examination

It is recommended that the child be given a neurological examination prior to training to determine whether or not a severe impairment to the speech mechanism is present.

3. Audiological Examination

A determination of the child's hearing ability should be made. Results of this examination might determine if the child should undergo training in the speech mode, or if a referral should be made to a nonoral-mode-training curriculum. Until recently, there were no efficient ways to assess if a severely handicapped child could hear well enough to be considered a candidate for speech and language training. Research, combining conventional audiological techniques and operant conditioning principles, has shown that it is possible to make such an assessment. For these readers interested in a thorough treatment of operant audiometric procedures, the most useful volume should be: Audiometry for the Retarded: With Implications for the Difficult-to-teach by Robert Fulton and Lyle L. Lloyd (The Williams and Wilkins Company, 1969).

4. Reinforcer Selection

Since reinforcement principles play a vital role in shaping child behavior, it is imperative that strong reinforcing consequences be identified for each child. Sometimes simple praise or approval is a sufficient reinforcer. Too frequently; however, many severely handicapped children do not value social approval, and food items must be substituted instead. A simple procedure for determining food preferences for a child is to: (1) choose a number of edibles such as juice, Kool-Ade, ice cream, candy, potato chips, etc. and place a sample of each item in a cup cake pan; (2) give the child a small sample of each; (3) then, hold the tray in front of the child allowing him to make one selection; (4) record the child's selection on a data sheet and continue to present the tray (repeat 3) until a preference is shown. Of course, these preferences will likely fluctuate during the course of training and it might be necessary to readminister this test with a new selection of edibles at periodic intervals.

5. Vocal and Motor Imitation Pretest

Placement of a child in a language training program is heavily dependent on his/her ability to imitate. Children who can already imitate (vocally) can be advanced directly to functional speech and language training; children who cannot must be taught to do so.

5. Continued

The imitation pretest given at KNI contains 20 responses; 10 motor models and 10 vocal models. The selection of the particular items for a pretest does not necessarily dictate that they must eventually become the responses to be trained. The test is simply designed to determine if the child is "imitative," or near imitative. It should be administered in a quiet room that is free from distractions. Usually, the teacher and the child sit facing each other. The teacher demonstrates a motor action or vocalization, allows the child approximately 10 seconds to respond, and then scores the child's response on a data sheet. If the child imitates correctly, a (+) is scored; if the child responds, but incorrectly a (-) is scored; and a (0) is scored if the child does not make an attempt. The decision to (or not to) reinforce a correct child-response on the pretest is decided upon (in advance) by the teacher. If the emphasis is not on research, then it might be advantageous to provide feedback after each trial. The test should be given as often as is necessary to assess the child's imitative skill.

6. Assessment of Vocal Frequency and Diversity

While many children may be nonverbal, few are nonvocal (mute). It is possible that a child's spontaneous vocal repertoire might be used as an indicator for selecting vocal utterances to be brought under imitative control. For example, if a child is observed to frequently utter such sounds as /ba/, /dada/, /ah/ while sitting alone, or while playing with a toy, then these sounds could be selected as vocal imitation training items. A systematic way to assess a child's rate and frequency of sounds is to improvise a 15 or 20 minute free play situation with the child. During this time, a tape recorder should be operating. Later, an analysis of the tapes will allow the teacher to identify the most frequently uttered sounds. Several free-play sessions should be conducted.

The sequence outlined above represents most of the pretraining assessments administered prior to training at KNI. An analysis of this battery will allow the language teacher to decide if the child must be placed in an imitation training program, or if he/she can begin in functional speech and language training. Omitted from the above assessment sequence was an assessment of a child's receptive language abilities. This was done for two reasons. First, the emphasis in this presentation will be on developing speech production in nonverbal children. Thus, high scores on a receptive-language-abilities test will show that a child might be a good "direction follower" but still not a language producer. Second, Section IV presents a Test-Teach approach to functional language training that contains an ongoing assessment of a child's language abilities both receptively and productively.

III. Training Language Prerequisites

There is presently no consensus on what constitutes all necessary pre-language behaviors. There is general agreement, however, that if children can hear, discriminate between sounds, and reproduce (imitate) the speech sounds they hear others make, important prerequisite skills for later language development have been mastered. Several imitation training strategies have been used to teach nonverbal children to imitate. So far, there is no evidence to suggest that one strategy is more effective than another. They all work for some children. However, it is also true that none works for some other children. The KNI laboratory has found that some children do not learn to imitate vocally even after years of training. We (and many other researchers throughout the country) are trying to account for this failure. However, it appears as though easy remedies are not in the foreseeable future, and as successful as imitation training strategies have been with many nonverbal children, some children will continue to be "nonimitators." Later in this section, the current imitation training strategies will be presented in detail.

Attention Training

The ability to "pay attention" may be considered a prerequisite skill that is necessary for successful participation in any language training class. "Attention training" has been included as a usual starting point for most language training programs, particularly those that have been designed to teach very low functioning children.

O. Ivar Lovaas (1967) was among the first to apply operant conditioning procedures to remediate and to develop language behavior in severely handicapped children. He concluded that before new socially desirable behaviors could be taught, tantrums, self-destructive, and self-stimulatory behaviors needed to be eliminated.

The efficacy of attention training procedures *per se* must relate to the length of time it takes to bring a child's attending behavior under control. If it is accomplished in a relatively short period of training time, then its value as a legitimate training step would be considered an insignificant issue. However, if many weeks or months need to be invested specifically into "Attention Training" procedures, then alternative ways to by-pass attention training might be useful.

Typically, attention training includes shaping the child, through successive approximations, to sit quietly in a chair, to maintain eye contact with the teacher, and to suppress stereotypes or self-stimulatory behavior. Usually, the teacher presents a verbal cue such as "Look at me," setting the occasion for appropriate attending behavior. When the child regularly attends to the teacher for five to ten seconds after the request to "look", the child has mastered the attending prerequisite.

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Generalized Vocal and Verbal Imitation

The importance of verbal imitation as a prerequisite skill for later language development is an almost universally accepted axiom. The precise extent to which imitation and reinforcement contribute to language development, however, remains a major issue for empirical research.

Operant conditioning techniques in particular have been successful in establishing generalized verbal repertoires in previously nonimitative children. Typically, the procedure has been to present a model of the vocal stimulus to be imitated (e.g., "John, say MA MA"), wait briefly for the child to approximate an imitative response, and reinforce. Training usually continues in this manner until the child begins to imitate new models the first time they are presented. At this point, the child is said to have learned a generalized imitative repertoire, and is ready to learn that words can be used symbolically (functionally).

Successful as operant procedures have been, most researchers and language teachers agree that more sophisticated ways are needed to teach nonverbal children to imitate. The typical procedure (outlined above) is arduous and time consuming, requiring a language teacher to present the same stimulus (e.g., "MA MA") perhaps thousands of times until the child begins to imitate. Then, a second sound must be trained and brought under imitative control, and then a third, and so on. This method of instruction may continue for months, or even years, before the child becomes a skillful generalized imitator.

Various training "strategies" have been used to teach language handicapped children to imitate. Baer, Peterson, and Sherman (1967) taught nonimitative retarded children to imitate a wide number of motor movements (e.g., the teacher raises her hand and says to the child, "Do this") before beginning training on vocal items. They reasoned that motor imitation training before vocal or verbal allows the teacher to assist the child physically through the desired imitation more easily than would be true in the vocal mode. Sloan, Johnston, and Harris (1968), using much the same rationale as Baer, et al., (1967), also required their subjects to master motor imitations before training in the vocal mode, but they chose motor imitations that involved movements of the tongue and mouth. Once the subjects were imitating the motor movements (e.g., open mouth) training began to include a vocal component as well (e.g., the subject was required to open the mouth and say "AH"). Lovaas, Berberich, Perloff, and Schaeffer (1966) taught autistic children verbal imitations bypassing motor imitation, and training instead with a stimulus that possessed salient auditory and visual cues (i.e., MA instead of KA). They reasoned that some children learn to discriminate sounds with visual (lip closure) and auditory components more easily than those with only auditory cues.

Thus, there are at least two ways the teacher can design a basic imitation training curriculum. First, training could be devoted to teaching the child to become a proficient motor imitator. The teacher

would select and train one motor action to a satisfactory criterion, then train another, and so on until the child demonstrates that he is able to imitate all of them when they are randomly presented during a single session; then, training would begin on vocal items until the child can imitate most simple vocalizations. This was the strategy used by Baer, et al., 1967. The second strategy is to bypass motor imitation training entirely and begin to train vocal/verbal imitation directly. This strategy was followed by Lovaas, et al., 1966. Unfortunately, there are no easy guidelines available to tell the teacher which strategy should be used. Of course, if the imitation pretest data show that the child can already imitate motor actions (but not vocal items) then it is reasonable to assume that training should be given directly in the vocal mode. However, if the child can imitate neither vocal or motor items, then what strategy should the teacher follow? One solution would be to train both modes concurrently. For example, the teacher might define an imitation training session as one consisting of 60 presentations of a stimulus to be modelled. Fifteen of those presentations could be "clap hands" (Trials 1-15); the second could be "say /ah/" (Trials 16-30); the third could be "touch knee" (Trials 31-45); and, the fourth can be "say /ow/" (Trials 46-60). If, for example, one of the items met a predetermined criterion (say 12 out of 15) before the others that item could be temporarily dropped from training and a new stimulus of the same mode (vocal or motor) could replace it. On occasion, the teacher should conduct sessions that include all of the items that had reached the 12 out of 15 criterion. By randomly presenting the "learned" stimuli within the same session, the teacher can determine if the child is discriminating between the various teacher-models. If the child demonstrates that he has become a proficient motor imitator before he becomes a good vocal imitator, then the teacher can discontinue training in the motor mode entirely and devote all training on vocal stimuli.

Regardless of the training strategy decided upon, the teacher must also decide which training items should be trained first. If motor training is begun, is there any advantage in training the motor response of drinking Kool-Ade from a cup over touch table? Likewise, if training is to begin directly on vocal stimuli, what sounds should be selected? Again, there is very little consensus to help answer these questions. However, the child's own spontaneous response repertoire might be a logical place to look.

Traditionally, operant language researchers have selected gross motor movements such as clap hands, touch head, stand up, etc., or vocal models that were clearly distinct from one another, both visually and auditorily. Frequently, vocal stimuli have been selected as training items that have never been heard in the child's spontaneous repertoire.

In the initial phases of vocal imitation development, Bricker, Dennison, and Bricker (1975) emphasized the importance of allowing the child to practice vocal chaining. Vocal chaining is said to occur when the child utters a sound that is immediately then imitated by an adult, if the adult's

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imitation is then repeated by the child. According to Bricker et al., (1975)..."In the early stages of imitation the child may respond only if he initiates the vocal chain." After repeated practice of the child-initiated vocal chains, the adult can become the initiator, thus accomplishing the usual imitation-training procedures already discussed. In the Brickers' procedure, however, vocal models are selected that the child has been observed to produce spontaneously. By utilizing the child's spontaneous vocal repertoire to determine what vocal models should be trained, the procedure ensures that the child possesses the phonological-response prerequisites necessary to produce the responses; the task then is to bring these responses under imitative stimulus control. A study conducted by Keogh (1974) supports the Brickers' vocal-model selection strategy. In this study, a seven-year-old severely retarded boy was taught to imitate sounds that appeared in his spontaneous repertoire. The procedure involved tape recording a baseline of spontaneous utterances during free play sessions, then rank ordering them according to their frequency and diversity. Three categories of sounds were selected as models for imitation training: 1) sounds that occurred at relatively high frequencies in the child's spontaneous repertoire, 2) sounds that were of relatively low frequency, and 3) sounds that were never uttered spontaneously by the child. All categories were trained in a standard way (i.e., modeling, shaping, chaining and reinforcement). The child learned to imitate sounds that were of high frequency in his spontaneous repertoire, but he did not learn to imitate the sounds that were absent from his vocal repertoire. Thus, there might be some advantage in selecting vocal models for training that the child has been observed to produce spontaneously.

It can also be hypothesized that motor responses such as the traditionally used clap hands, stand up, etc., are less salient than motor responses such as drinking from a cup, turning a knob to produce music, squeezing a bicycle horn, etc. The basis for this hypothesis is that the latter set possesses response-specific features which might be more "inherently" reinforcing than simply clapping hands, or touching a table. Recall that the goal of imitation training is to teach the child to do what the teacher does, and as long as the selection of motor stimuli for training remains arbitrary, there might be some advantage in selecting responses that possess response-specific, and possibly reinforcing, features.

This section surveyed some of the intervention procedures that are commonly used to teach speech and language prerequisites to language handicapped children. The survey suggests that relatively few prerequisite training procedures exist. Most of them are concerned with developing imitative behavior. The heavy emphasis on imitation training procedures probably reflects what is known and what is yet-to-be-known about speech and language prerequisites. There is some consensus that the ability to imitate is one of the important prelanguage prerequisites. How and where to program imitation training procedures remains an issue, as well as the need to identify and program "unknown" prerequisites.

IV. Functional Speech and Language Training

Most of the existing language intervention programs and theoretical models for intervention reflect an interaction between psycholinguistic and learning theory. The programs and models vary considerably, however, in the extensiveness of the interaction. The language program that will be discussed at length later in this section (Guess, Sailor, and Baer, 1976) comes closest to representing a simplistic learning theory view of language training. Modeling and reinforcement represent the fundamental underpinnings of the program. Other strategies incorporate operant conditioning principles in their intervention designs, but identify them as effective teaching techniques rather than theoretical constructs for language acquisition. For example, Miller and Yoder (1974) suggest that ..."No language program can possibly teach all of the responses a child will need (or could naturally make) simply by a program employing modeling, and differential reinforcement" (p. 506). This difference in interpretation of the language learning process reflects the "state of the art" as far as language remediation is concerned.

Each of the intervention strategies to be discussed in this section evolved as a result of years of research by developmental psycholinguistics, learning theorists, and others interested in speech and language. The authors of each of the programs easily can point to a segment of the professional literature and build a reasonably strong case to support the rationale for their particular intervention model. Clearly, the next step for all language intervention programs is to support strategy rationales with data showing the effectiveness of a particular model. Thus, diversified interpretations of language intervention programming should continue to be encouraged until a trend develops showing that a particular model is more efficient and effective than another.

The remainder of this section will be devoted to a review of some of the more widely used language intervention programs. It is not within the scope of this presentation to compare and contrast one program with another. Rather, the review will highlight the major features of each model.

Guess, Sailor and Baer Curriculum

This language intervention program is based on learning theory. Consequently, most of the operant procedures that were used in the laboratory to analyze speech and language experimentally represent the program's primary teaching strategy. Several modifications in the Guess, Sailor and Baer Program have been published in various sources and at various times (Sailor, Guess and Baer, 1973; Guess, Sailor and Baer, 1974; Guess, Sailor and Baer, 1976); the one that served as the basis for this review was the latest edition (Guess, Sailor and Baer, 1976). This portion of the completed curriculum presents the first nine training steps in a "training manual" format.^{2} Other publications (Guess, Sailor, Keogh, and Baer, 1976) have identified 60 individual training steps that were previously field tested in an "experimental version." As the field test results of the subsequent training steps are fully analyzed, these too will be published in addition to the first nine.

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Unlike the comprehensive Bricker, Dennison, and Bricker program (1975), (to be discussed later) this one emphasizes the importance of rapidly bringing children into contact with "communication" as an effective mode of controlling the environment. Above all, this process can be effective only if language is functional. Secondly, the authors suggest that functional communication training must be engineered in such a way so as to allow children to expand their own language repertoires. This might be done, for example, by teaching the children to ask "What's that?" when confronted by a significant environmental event for which they have no label (or lexical marker). Third, the entire thrust for teaching functional communication depends on flexible strategies that are easily shifted from one design to another as ongoing assessments dictate.

Within this basic framework, the sequence of training has been organized according to five dimensions: reference, control, self-extended control, intergration and reception. Reference assumes that the fundamental function of language is to symbolize. Thus, Step 1 teaches children that words can be used to symbolize persons and things in the environment. In this step, children are taught to label or name 16 common objects. The language teacher is encouraged to select 16 objects that seem most appropriate for the particular child being trained. The control dimension is designed to teach children to request further, specific training inputs based on their discrimination of what they do and do not know. Step 3 attempts to teach the children to use functional language to exercise some control over their environment. It is done by teaching children to request an object by uttering "Want (desirable item)," and later in Step 8 by making the same request but in a more grammatical way (e.g., "I + want + [desirable item]").

The self-extended control dimension is taught in Step 4. Here the child learns to ask "WHAT'S THAT?" when shown novel objects. Throughout the entire program every correct response made by the child is immediately reinforced. Sometimes reinforcement is the "natural" result of the child's utterance. For example, the receipt of a cookie after the utterance "Want cookie" is a reinforcer specific to the request; at other times the receipt of an M & M plus a ball after the child labels the object as a "ball" might be necessary early in training.

The reception dimension corresponds to those skills taught during the speech production procedures. For example, Step 2 teaches the child to "point to" those items that earlier had been trained productively. Another example of the receptive dimension of language training occurs in Step 7. In this step, the child is taught to demonstrate receptive competence by saying "yes/no" instead of using a pointing response. The child is asked a question such as "Is this a ball?" From the child's previous experience (Steps 1 and 2) the child learns to integrate the dimensions of the object in question and the statement of the teacher to produce correctly "Yes" or "No." The dimension of integration is more explicitly established during training Steps 5, 6, and 9.

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In Step 5, children are shown some objects that they have learned to label (Step 1) and some that they probably have never seen before. For objects that they already had learned to label earlier in training, the correct naming response is expected. For objects that are novel, the child must ask "What's that?" Thus Step 5 integrates the skills mastered during Step 1 and during Step 4 of training. Step 6 has been included as an extension of Step 5, since at some time it is expected that the "What's that?" response should eventually be replaced by a naming response. If it does not occur during Step 5, it is specifically programmed in Step 6.

The final step (Step 9) in the recently published version teaches verbal response sequences that more closely resemble conversational speech. For example, the child might be shown an object (such as a cookie) and asked "What is that?" The expected response is "cookie." Next, the trainer asks "What do you want?" with an expected response of "I want cookie." This step integrates what he has learned.

The appropriate starting point for a child's entry into the program is determined by the child's score on a "Skill Test" given prior to training on each step. A basic criterion for acceptance into the program is the child's competency as a generalized verbal imitator. Although the program does not provide specific procedures to assess a child's imitative repertoire, it is assumed that the candidate possesses a fairly competent imitative repertoire. Thus the entry behaviors required by Guess, Sailor, and Baer are similar to those required by some of the other programs presented in this section, yet the training content, sequence, and reinforcement procedures vary considerably between them.

Recent trends in language intervention reflect an interest in developing nonoral modes of communication. The approach taken at KNI is that any potentially useful language curriculum can be converted into a nonspeech system. Presently, Lois Waldo and Galen Berry of the Speech and Audiology Department at Kansas Neurological Institute are in the process of converting the Guess, Sailor and Baer program (1976) into one where manual signs (by Berry) and a communication board (by Waldo) replace the speech mode. The obvious advantage for using a nonspeech mode exists when deaf, hearing impaired, or neurologically impaired children are students. Another nonspeech communication system being used at Kansas Neurological Institute is Non-SLIP. This system uses plastic tiles as the communication mode. Non-SLIP will be discussed later in this section.

The Miller and Yoder Curriculum

Miller and Yoder (1972a; 1972b; 1974) present a rationale of language intervention that is based on psycholinguistic data. A single curriculum guide or program manual is not yet available, and it is necessary for anyone interested in developing an intervention model based on Miller and Yoder's strategy to become familiar with at least some of the psycholinguistic literature. In particular, the work reported by Bloom (1970, 1973), Brown (1973), Schlesinger (1971), and Bowerman (1971) would be helpful when considering the model offered by Miller and Yoder.

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In their 1974 publication, Miller and Yoder use four guidelines to structure language training. First, they believe that the content of any language training program should come from what is known about normal children's development. For them..."a language teaching and modification program should be developed from what is known about the language code, its structure, function, and its development and use in children with unimpaired intellectual functioning" (Mental Retardation, 1972, p. 8). Because current psycholinguistic data show a considerable shift away from a syntactically structured program to a semantically structured language development process, intervention strategies should identify semantic concepts to provide an early basis for language acquisition. Bloom (1971, 1974), Schlesinger (1971) and others have identified "language functions" in their observations of normal children's syntactic acquisition process. For example, some of these functions may be expressed by using a single word. "No" can express the function of rejection; "more" the function of recurrence; and "stop" the function of cessation. Other relational functions have been identified and the terminology used to describe these functions varies slightly depending on which psycholinguistic source is read. Miller and Yoder mainly use Bloom's (1971, 1974) terminology to identify semantic functions. Bloom suggests that words like "Mommy," "Daddy," etc., might express an AGENT OF AN ACTION FUNCTION or an OBJECT OF AN ACTION function. The primary goal of the Miller and Yoder intervention strategy is to teach as many semantic functions as possible. To determine which function should be taught first, Miller and Yoder suggest observing the language deficient child in the environment to which he is accustomed. Those semantic functions that occur most frequently should be identified and trained since..."It is essential for the child's own unique experiences to serve as the basis for training, thereby maximizing what the child brings to the learning situation in terms of his potential perceptual-cognitive awareness of objects and events about him" (1971, p. 518). As soon as the "target" semantic functions have been identified, all subsequent training should be designed to establish the meaningful expression of the function by the child. First, the child must associate the semantic function with its label. Just how much exposure to such an association is required is not clear. Nevertheless, the next step is to determine whether the child comprehends the relationship between the semantic function and its label. An imitation paradigm is used to teach the child to reproduce the label (or lexical marker) in the presence of the semantic-function being taught. Other familiar experiences are gradually introduced that express the same semantic function just mastered. When the child has begun to express the newly trained functions spontaneously, the utterance is expanded to two, three, or even four words. Thus, the child eventually uses three- and four-word utterances to express functions such as AGENT + ACTION + OBJECT, AGENT + ACTION + LOCATION, or AGENT + OBJECT + LOCATION.

Stremel and Waryas Curriculum

Stremel (1972) and Stremel and Waryas (1974) have developed an intervention program that shares many common features with Miller and Yoder's model. This one, however, is considerably more specific in describing

its procedures and training sequences. As with the Miller and Yoder program, a prospective user of this intervention model would benefit by becoming familiar with psycholinguistic literature. Stremel and Waryas report that their strategy has been used with considerable success to improve the language skills of residents of the Parsons State Hospital and Training Center, Parsons, Kansas.

Stremel and Waryas' interpretation of previous linguistic analyses embraces the tenet that children's early language acquisition is best described as a rule-governed system that progresses in sequential stages. According to Stremel and Waryas, the regularities observed in linguistic development on semantic, syntactic, and on phonological levels imply that any language-performance level depends necessarily on a prior level of linguistic development. Following the guidelines offered by Bloom (1971, 1974) and other psycholinguistics, Stremel and Waryas stress the teaching of grammatical forms (SUBJECT + VERB + OBJECT) to express various semantic relationships.

Individual responses within each step of the program are taught by applying operant conditioning principles. The technology that was refined by applied behavior analysts during the 1960's is apparent in this program's use of stimulus control programming techniques, shaping responses through the use of differential reinforcement, pre- and post-test measures, etc. Edibles, tokens, and social praise are considered to be viable reinforcers to consequate behavior. Thus, the authors have combined psycholinguistic theory and operant technology to structure a potentially effective language training program.

The program has been divided into three main sections: I. Early-Language Training; II. Early-Intermediate Language Training; and III. Late-Intermediate Language Training. A child's placement in the program depends on a set of entry behaviors. For example, in order to enter Early-Language Training, a cnadidate should be able to attend grossly to the supervising adult, follow simple instructions, and comprehend and label at least ten pictures or objects. It is obvious from the program's entrance criteria, that it is not intended for very low functioning children. In order to enter this program, a child must show that he possesses at least a rudimentary linguistic repertoire. Children who are nonverbal, nonimitative, or under very poor instructional control would not benefit from Stremel and Waryas' program.

McDonald and Blott Curriculum

In 1974 the Nisonger Center at Ohio State University, Columbus, Ohio, announced the development of the Environmental Language Intervention Strategy (ELIS), a semantic-based assessment and training strategy to teach early expressive language (MacDonald, J. D., and Nichols, M., 1974a; MacDonald, J. D., Blott, J. P., and Gordon, D., 1974b; MacDonald, J. D., and Blott, J. P., 1974c).

The major objective of the ELIS was to teach a functional use of language in children who were already using single words communicatively. The specific content was based on psycholinguistic data, particularly the work of Schlesinger (1971). Essentially, eight semantic-grammatical rules that were identified by Schlesinger served as the basis for training. All of the rules expressed specific function similar to those used in the two previously reviewed programs. For example, the utterance "DADDY THROW" might express the AGENT + ACTION rule function; the utterance "THROW BALL" might express the ACTION + OBJECT rule; or, "NO BALL" might express negative function. Rules that are trained first, are those that have been observed to occur most frequently in the child's language repertoire.

One particular feature that distinguishes this program from others concerns the manner in which the semantic-grammatical functions are trained. Imitation, conversational, and structured-play training occur concurrently so that the child will begin to use the newly acquired structures functionally as soon as they are mastered imitatively. The purpose of the imitation phase is to teach the child to produce particular semantic-grammatical utterances so that control of the utterances can be more easily shifted to conversational and spontaneous use. The child is asked to imitate a two-word utterance in the presence of two discriminative stimuli. First, the child is given a model, or linguistic cue, such as the instruction, "Say, throw ball." A second discriminative stimulus is paired with the instruction that is functionally tied to the utterance. An example would be to always throw a ball up into the air each time the child is asked to say "Throw ball." The consequences for a correct imitation include the repetition of the original model, "Throw ball," social praise, and a token. A brief time out period follows incorrect imitations by the child before a new trial begins.

Conversational training runs concurrently with imitation training. The discriminative stimuli are slightly altered during this phase so that a more conversational-like response is given. The nonlinguistic cue remains the same (throwing a ball into the air). The verbal cue, however, is changed from "Say, 'throw ball'" to "What am I doing?" Correct approximations are reinforced in a like manner to imitation training, and whenever necessary, a prompt such as "say throw ball" is provided to increase the likelihood of a reinforceable response.

The structured play phase of the training program runs concurrently with the two phases already mentioned. As for the earlier phases, specific discriminative stimuli, expected responses, and programmed consequences are clearly given. The following passage might best serve to summarize the ELIS:

> "...On the basis of the experimental subject's baseline performance on the ELIS, the action + label and X + locative rules were selected as the major classes for training, for three reasons. First, they were the two most frequent rules in the subjects' baseline performance. Second, they are those rules reported by recent

> investigators to be the relations occurring most frequently in early normal language development (Brown, 1973a). Finally, action + object and X + locative appeared to be rules with sentence integrity and ones from which longer, more complex utterances could generate easily..." (MacDonald, J. D., Blott, J. P., and Gordon, K., [1974], p. 399).

Thus the ELIS uses the most recent psycholinguistic data to develop the training content, applies contingencies of positive reinforcement and time out procedures, and requires that prospective students possess a language repertoire at the single word level.

The Bricker Curriculum (Bricker, Dennison, and Bricker, 1975)

The Constructive-Interaction-Adaptation Approach to Language Training represents the most recent revision of the Brickers' language intervention program. As in some of the previous versions of the Brickers' work, this strategy embraces psycholinguistic theory, operant conditioning principles, and Piagetian thought. It is one of the most comprehensive language intervention programs included in the review. For some users, however, its comprehensiveness might be considered somewhat of a handicap, especially for those who have little control over the environments where speech deficient students live. This point will be discussed in more detail later.

Piagetian principles of infant's cognitive development, especially during the first two years of life, served as a model for structuring the Bricker-Dennison-Bricker program. Piaget has described the first two years of life as being a sensorimotor period. During this period, the infant is almost continually interacting with (or exploring) his environment. Eventually, the infant learns that objects endure or remain the same even though they are perceived from different angles or when the infant temporarily looks in another direction. Object permanence marks the beginning of a process by which the infant assimilates and organizes new events with those that have been previously learned. Some of these "events" relate to language behaviors, and thus, the authors have emphasized this period as being critical for language training.

Within the Piagetian framework, 24 training phases have been structured. Each phase has been sub-classified under one of five gross headings. They are Attending Skills, Imitation, Functional Use, Comprehension, and Production. Phases 1, 2, and 4 fall under the heading "Attending Skills"; Phases 3, 5, 6, 7, 8, 12, 13, 16, 19, and 22 teach "imitation" skills of different topographies; Phases 10 and 11 teach the child that objects may serve a function and that they may be used in play activities; Phases 9, 14, 17, 20, and 23 teach the comprehension of single words and grammatical strings (sentences); and Phases 15, 18, 21, and 24 teach children to express words and grammatical strings.

Although the phases are consecutively numbered for convenience, training does not proceed consecutively. Instead, two and possibly three phases could be trained concurrently. For example, Phase 22 is designed to teach the imitation of three-word strings such as "BOY EAT COOKIE." Concurrently (but not in the same session), the child is taught to comprehend the meaning of AGENT + ACTION + OBJECT grammatical relations; "BOY EAT COOKIE" is one (Phase 23) such relation. It is conceivable that expressive training on these same forms could also be trained (Phase 24). Similar strategies are seen in all of the programs reviewed so far, especially in the ELIS. In the ELIS, imitation, conversation, and structured-play training occur concurrently.

An obvious requirement for any comprehensive program is to include guidelines for student placement - an assessment device. Bricker, Dennison, and Bricker suggest "...if a child already comprehends the names of many objects and actions such as cup, baby, drink, and eat, training should probably be initiated with the comprehension of two-word utterances." Thus, each training phase is accompanied by a set of assessment guidelines. The proper use of these guidelines should enable the teacher to place the child at the most appropriate point for training.

The Constructive-Interaction-Adaptation Approach, as the Brickers' program is entitled, attempts to incorporate language training into the more global conceptual developmental process rather than treating it as a separate entity. It requires that the child's total experience contributes substantially to the language learning aspect of cognitive growth, and any attempt to teach speech and language should embody as much of the "natural world" into training as possible. Thus, it is important that as much of the child's environment be included as part of the "training environment." For the language teacher who is able to work with a particular child at a predetermined specified period of time (possibly for a half-hour per day), the Constructive-Interaction-Adaptation Approach might be too demanding. However, for agencies that are able to establish "early infant stimulation" environments, then, the Bricker-Dennison-Bricker might be a most suitable model to follow.

The Language Acquisition Program (Kent)

The LAP (Kent, 1974) was "developed for institutionalized, severely retarded, nonverbal children from five to 20 years old." The 1974 edition evolved after eight years of work by the author and her colleagues. It is one of the few curricula reviewed in this discussion that includes students who lack speech and language completely.

Language instruction is conducted in a much more structured manner than some of the previously reviewed programs. The author stresses the importance of one-to-one instruction throughout, but does suggest that two students could receive training during a single session. Such simultaneous training, however, should be conducted only with children who are under good instructional control. All of the program's training procedures throughout are based on operant conditioning principles.

The training manual has been divided into three sections. They are Pre-Verbal, Verbal-Receptive, and Verbal Expressive. The Pre-Verbal section teaches attending skills and specific motor imitations that are considered to be prerequisites for performance in later phases of the program. The first phase of Section I was designed to teach the child to sit in a chair. Next, stereotyped or interferring behaviors such as rocking, climbing, gazing, etc., are eliminated by employing overcorrection procedures recently described in the literature (Azrin, Kaplin, and Foxx, 1973). Once the child is sitting reasonable still, the child is taught to look at objects and at the teacher's face by responding to questions such as "look at this" or "look at me." The final phase in this section teaches specific motor imitations in response to the instruction (and model) "DO THIS."

The training sequence, definitions of each behavior, and the criterion for advancing from phase to phase are presented clearly in the text of the manual and later in a numerical sequence. Children are tested regularly throughout training to ensure that they have remembered what has been previously trained and to guide the trainer in deciding what phases to train next.

The second section of the program concentrates on developing a fairly comprehensive receptive language repertoire. Initially, the motor responses that had been taught imitatively in the previous section, are brought under instructional control. In a successive manner the child gradually learns (via a pointing response or an action) body parts, simple objects, and to comply to simple instructions such as "sit down." This basic receptive vocabulary is expanded throughout the remaining phases in this section until the child is able to understand and comply with such instructions as "Make a circle" (with a magic marker), "make a tower" (with blocks), etc.

The first phase in the Verbal-Expressive section reverts back to (verbal) imitation. The early emphasis is devoted to building a generalized verbal repertoire through the use of standard reinforcement and shaping techniques. Once the child has learned to reproduce single-word utterances imitatively, control is then transferred to instructions such as "What is this?" or "What is in the box?" The training rationale in this section follows the same expansion paradigm used in the previous section, but now in the verbal mode.

One additional feature of the Kent program is its adaptation (by Martha Snell) to a nonoral approach for use with hearing impaired and deaf children.

The Teaching Research Initial Expressive Language Program

This program (McDonnell, H. J., Fredericks, H. O., and Grove, D. N. 1975) used a behavioral approach to teach expressive language to speech deficient children. The authors state that after successful completion of the program a child should be able to converse using five word utterances. Eight training phases comprise the entire curriculum. Phase I teaches the

child to maintain eye contact with the teacher; Phases II, III, IV, V, and VI teach a generalized verbal imitation repertoire; Phase VII teaches object and action labeling; and finally, Phase VIII uses chaining, imitation, and reinforcement to teach the five word chain.

The program places a great deal of emphasis on vocal and verbal imitation without introducing functional language use (either productively or receptively) until a fairly well developed imitative repertoire has been established. This method of training contrasts with some other programs that use imitation procedures. For example, the ELIS use of imitation procedures is in conjunction with simultaneous training involving conversational and structured play. The goal is to make utterances functional as soon as they are learned imitatively. In addition to the curriculum sequence, the manual provides a section that defines terms like reinforcement, responses, imitation, and others commonly used when operant conditioning procedures are described. Recording and graphing procedures are explained. Over 375 stimulus cards, 50 data sheets, and six student placement tests are provided with each training manual.

The Peabody Language Development Kits for Level # P

The Level # P kit (Dunn, Horton, and Smith, 1968) was designed to stimulate productive and receptive language (particularly syntax and grammar) in children who already possess a modest speech and language repertoire. Specifically, young school-aged educable retarded chidlren, pre-teenaged trainable retarded children, kindergarten children from disadvantaged areas, and average three- and four-year-old preschoolers represent the populations for whom the kit was intended. The curriculum might be more aptly described as an "enrichment" program, rather than an "intervention" program designed to develop speech and language behavior in nonverbal children.

Although teachers of the Level # P program are encouraged to recognize the importance of behavior modification techniques to reinforce desirable behaviors, the theoretical basis for the program's curriculum is psycholinguistic rather than behavioral. The program's content and structure have been divided into 180 daily units, and each unit has been further divided into one 20-minute morning lesson (called Part A) and one 20-minute afternoon lesson (called Part B). All aspects of the child's class experience emphasize the appropriate use of syntax and expansions of grammatical forms. A prominent feature of the program is that it has been designed for classroom (group) use. All of the lessons can be completed in one academic school year (e.g., 180 days).

Non-SLIP (Non-Speech Language Intervention Program)

The Carrier and Peak (1975) program is a recently published comprehensive nonspeech communication system developed specifically for severely and profoundly retarded persons. The authors correctly point out that most of the language intervention programs in use today have failed with this segment of the language deficient population..."because most attempts to

teach low level retardates have been based on programs or training procedures developed primarily for higher functioning children" (Carrier and Peak, 1975, p. 4).

A major impetus prompting the development of Non-SLIP came from some of the important chimpanzee research dealing with communication systems among primates. In particular, the accomplishments of the Gardners and David Premack are reflected in Carrier and Peak's program. Instead of teaching within the speech modality, students in Non-SLIP are taught to manipulate plastic symbols that are used to represent articles, nouns, verbs, and prepositions. The teaching method employs operant conditioning techniques, particularly reinforcement, to shape criterion behavior.

Before the grammatical strings are taught, a series of important prerequisites must be mastered. In fact, considerably more time may be spent teaching students the Non-SLIP prerequisites than the communication phase. As prerequisites to communication training, the student must be able to pick up plastic symbols and place them on a wooden tray, then, via a match to sample paradigm, discriminate between various symbol shapes, between pictures or objects, between pictures and their plastic-symbol representations, between five colors, and finally, between one and two stripes that run across a corner of the symbols. For those who have had experience working with severely and profoundly retarded children, the prerequisites required by Non-SLIP are indeed challenging.

Like most of the programs presented in this section, Non-SLIP is intended to teach only those language behaviors that are judged to be necessary for an individual to perform the basic functions of communication. Once the prerequisites are learned, the first step in teaching a student basic communication functions is to teach him to rotely string seven symbols together in a specific sequence by placing them on the wooden tray. The seven component sequence consists of an ARTICLE + NOUN + VERB AUXILIARY + VERB + PREPOSITION + ARTICLE + NOUN. Once the sequence has been mastered, the student is taught that each of the slots in the seven-component-string represent specific "symbol classes." For example, the second slot is filled by selecting a plastic symbol from the symbol class "Nouns, " the fourth "Verbs," the fifth "Prepositions," and so on. The color and stripe discriminations that were mastered during prerequisite training serve to distinguish the first appearing nouns and articles from those appearing later in the sequence, thus teaching the child to sequence the symbols "grammatically."

The first phase of the Non-SLIP requiring the student to make an "abstract" association is the labeling phase. Since the child already has been taught to match symbols with symbols and pictures with pictures, this phase attempts to teach a symbol-to-picture match. That is, the child is shown a picture of a boy, girl, man, lady, baby, dog, cat, horse, cow and a bird (at first, one at a time) and required to label by selecting the symbol that identifies the particular picture. The other grammatical classes are taught in a similar fashion until the child has learned the rudimentary communication system.

Summary

The speech and language intervention programs presented in this section represent a cross section of language remediation strategies in use today. Undoubtedly, there are other programs that could have been included in this review but were not. We are reasonably sure, however, that all of the major intervention "strategies" to date have been well represented.

Although all of the comprehensive speech and language intervention strategies reviewed in this section appear to be potentially effective, none has published data to document this effectiveness. Evidence showing that a modest speech and language repertoire can be developed in severely handicapped children has come from the experimental laboratory. These data were derived under stringent environmental conditions and most often by highly skilled technicians. The need exists to show that (1) the comprehensive programs as offered actually remediate language behavior and (2) the programs can be understood and effectively administered by paraprofessional personnel.

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Footnotes

[1] Some of the material presented in this chapter represents the work done by Drs. Doug Guess, Wayne Sailor, and Donald M. Baer at the Kansas Neurological Institute's (Topeka) experimental language intervention program. The author is indebted to them for granting permission to report it here. In addition, portions of this presentation appeared in Language Intervention Programs and Procedures for Language Handicapped Children: A Review of the Literature, Volume I, Final Report (1976) by Doug Guess, Wayne Sailor and William J. Keogh. This final report represents a portion of the results of a federal grant (RFP No. R0077FOA) awarded to the Kansas Neurological Institute by U.S.O.E., School Systems Branch, to review the acquisition, assessment, and intervention literature involving language handicapped preschool children.

[2] Part 2 of the Guess, Sailor, and Baer program is now available from H & H Enterprises, Lawrence, Kansas. This part includes training Steps 10 through 29.

WAYS TO INVOLVE PARENTS IN THE EDUCATION OF THEIR SEVERELY AND PROFOUNDLY HANDICAPPED CHILD

Part A: Philosophy and Experience

Dr. George Olshin
Director
Clinical Services Division
Southern Connecticut State College
New Haven, Connecticut

I am happy to participate in this conference because it gives me the opportunity to share with you several of my activities which fit into the theme of this conference.

I am a firm supporter of regional conferences such as we are attending today. The formal presentations and informal discussions we share will help us get-it-together in our own states and communities.

While preparing for my presentation, I remembered a report of a previous regional conference, conducted in Salt Lake City, Utah, in 1974, dealing with the severely, multiply handicapped. It also highlighted the need for parents to become involved with the education of their children. I would like to read some of the remarks made by Dr. Philip Roos, a participant at that conference, whose views on this topic are similar to mine.

> "To be sure, the parent of a severely handicapped child faces frustration every day of his life. But in addition to frustration, ladies and gentlemen, he faces some very deep and very meaningful existential conflicts. He is overwhelmed by feelings of helplessness, vulnerability, aloneness and the ultimate loss of immortality. It's not surprising, therefore, that the last twenty-five years have witnessed a new surgence of voluntary associations composed primarily of parents of handicapped children.
>
> The roles and functions of these associations have changed. Their early foci was to supply mutual support and to operate direct services for the children of the parents. Currently, the focus has changed to public information and education, to legislation, and the development of demonstration programs. And we are witnessing the emergence of new foci of activity. One of these is advocacy, citizen advocacy, agency advocacy, and as you have already heard, litigation. Parent associations have mounted suits in many of our states today. Finally, the setting of standards and the evaluation of programs.
>
> With the emergence of these new roles for parents it is not surprising that there has been [illegible] of

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"parent training programs. For example, we have today some viable training programs to teach parents to become citizen advocates. I brought with me a thrilling film which I will show the little work group this afternoon to illustrate the kind of training that is available in this arena.

There are training programs to train parents to become effective change agents, to evaluate knowledgeably programs and to articulate potently and meaningfully with administrators and professionals. There are currently programs available to train parents in the intricacies of legislative process, so they can go to the administrator and say, Hey, baby, here's the way you get a hold of revenue sharing funds on the state and local level, to channel into programs for the handicapped.

Undoubtedly the greatest impact of training programs is in the area of training parents to be paraprofessionals. They are functioning as members of program teams. Everybody is overwhelmed by the lack of professionally trained personnel, so parents are moving into this arena with some degree of enthusiasm.

There is, of course, compelling evidence regarding the impact of early intervention as it impacts on later cognitive proficiency. There is considerable evidence that the modest teaching strategies are significantly related to their children's performance. We now have a wide spectrum of parent training technology and materials, curricula, manuals, films, casettes, all this good stuff is readily available.

The approaches are primarily in two categories--cognitive and/or language development, and of course behavior modification. And research data indicate some very significant positive results from both of these approaches. We can point to an impressive number of successful programs in which parents of handicapped children are functioning as paraprofessionals.

There have been some interesting expansions of the basic concept. For example, the training of foster parents, the training of mentally retarded persons to train younger mentally retarded persons. The training of parents to train other parents and so forth.

I do not propose, ladies and gentlemen, in our intensive little work sessions, to bombard you with any of this material. You will be given annotated bibliographies and summarized program descriptions in the work group. Well, parents are obviously ready to assume some key roles as trainers and educators, as planners, as evaluators, as advocates and as change agents. But we must face the fact, ladies and gentlemen, that the days of begging and pleading

"are past. Parents today are overwhelmed with feelings of impatience. They want action and they want it yesterday. We must realize, too, that there is a need for change in some of our professional attitudes towards parents. And there is a need for change in some parental attitudes for professionals. I'm convinced that opportunities must be created to foster a viable symbiosis among parents, professionals and other administrators."

I whole-heartedly agree with Dr. Roos for the need for professionals and parents to work more closely.

I would like to relate several experiences showing how professionals can work with parents. Actually, what I'm doing is basing my remarks on some of my own experiences. I put together some brief case histories.

The first is about Jo and Wally Page. (You will see them on a TV tape a little later.) About 5 years ago, I was teaching the "Orientation to Special Education" course at Southern Connecticut State College, and Wally Page was taking the course. I usually invite the students in the class to share any experiences, personal or otherwise, pertaining to our course content. Well, after class, Wally came up and indicated that he had an autistic boy who was attending a private school for autistic children in New Haven. He proceeded to tell me what he and his family had gone through in raising their son, Tommy. I asked him if he would lecture to the class, telling them what he told me. He brought slides to class which helped describe the work he and his wife had done in Indiana to set up a community day and summer recreation program for handicapped children. Since they now reside in the New Haven area (having moved here because of the special autistic school) they have become a fantastic resource for the community.

We've become friends and are working together in a variety of ways. One thing we asked the Pages to do, and they were most gracious about it, was to produce a series of TV tapes for the New Haven Model Preschool Project (which will be described later). They are very generous in sharing their experiences.

Their son is now 17 years old, over 6 feet tall, and is non-verbal although he knows some signing. He needs constant attention. The greatest fear that Jo and Wally have is that should something happen to them, Tommy would have to be placed in an institution for severely handicapped individuals. We spent a good deal of time trying to plan for alternatives to institutionalization for such individuals. This is a difficult national problem and has not as yet been resolved.

Another area of concern they had was that parents of severely and profoundly handicapped children have never played with them -- and in fact do not know how to play with them. They had an idea for a project and proceeded to develop it.

They took a group of severely handicapped students between the ages

of 12 to 21, as well as some parents, to a gym and they taught the parents how to play with their children. This was the first time that these parents did this. In the past, others had cared for their children, and their contact was limited. They are also training college students to participate. In addition, these students are a source of "baby" sitters for these severely handicapped individuals. This means if the family wanted to take a much-needed weekend off, they had experienced individuals to care for their children.

The Pages took a leadership role in developing a branch of the National Association for Autistic Children. Through this activity parents and professional members are working closely to help educate each other in this difficult area.

They are a prime example of how parents are involved in the education of their child.

I have another acquaintance who is a parent of a severely handicapped CP child. Evelyn was concerned about services for her child after she completed school. She felt that the existing community agencies responsible for services to the handicapped were not concerned about this problem. We formed an informal group of parents and professionals and called ourselves the "Concerned Citizens for the Handicapped". We had a meeting and invited representatives from all the community service agencies. Representatives from most of them came and they described the role of their agencies. It soon became obvious that several agencies were not aware of what some of the others were doing. We agreed that an updated community service directory was needed so that parents and professionals would be aware of what is available in the community. The concern about the future education for post mandated children is not as yet resolved, but we have made a start by alerting those responsible for serving the handicapped that there are concerned citizens who demand action. Parents must push the professional and the legislator if needed educational services are to be developed.

Other ways that parents can become involved with the education of their children is through the "First Chance Network." This Network consists of about 200 model programs for preschool handicapped children, and is funded by the Bureau of Education for the Handicapped in the U.S. Office of Education. These were established by federal legislation and it is mandated that parents are to be part of the program. There is no other major program for handicapped children that has this degree of parent involvement. We have such a project in New Haven. It is a joint project between the New Haven Board of Education, the Clifford Beers Clinic, and Southern Connecticut State College. We have a full-time social worker. The Social Worker Component contains the following -- (note how the parents are brought into the educational program):

Coordination of Parent Program

> The services provided for parents are based on the needs of each family and their availability in terms of time and

psychological readiness for involvement. The type of service offered is planned jointly by the social work and teaching team. The types of services are:

--Social worker meets on a regular weekly or semi-monthly basis with a small number of parents...

- provides emotional support
- offers concrete help around child rearing techniques, behavior management, etc.
- assesses the need for further counseling and makes appropriate referrals
- allows for ventilation of feeling around having a handicapped child

--Parent Groups

- Several types of groups have been run during the past 5 years:
  a) instructional - focus on specific topics with guest speakers
  b) therapeutic - open-ended discussion with focus on feelings of parents and the development of parent to parent support systems
  c) behavioral - run jointly with speech pathologist. Time-limited and focused on setting up specific behavioral home programs for children

--Direct contact with Instructional Staff

- social worker facilitates communication between teachers and parents
- reminds teachers of which families they agreed to have direct contact with
- arranges for school visits by parents, home visits by teachers - goes with teacher if necessary
- keeps teacher posted on important changes in home situation

Resource Person to Staff Regarding Family Issues

--Parent Attitude Inventory

This inventory is completed on each family jointly by the the teaching and social work teams. It identifies problem issues in terms of cooperation and parenting and provides a framework for determining a plan of intervention. It is reviewed periodically to note resolution of problems and identify any new problems.

--Monthly consultations with teachers

During these meetings the Parent Inventory is reviewed, information is shared with the teacher re: changes in family

situations, concerns raised by parents, etc.

- Teachers are encouraged to maintain contact with families. Assistance provided to help them with: the barriers of age differences; anxiety about meeting parents; fears of not being able to answer all of parents questions.

With the assistance of Jo and Wally Page, project staff produced a series of TV tapes entitled "Parents on Parenting". This has become an important source of information to other parents of young handicapped children. This has proved an extremely positive way of getting parents to teach other parents, -- a way that is much more effective than can ever be done by professionals. It would be well to visit such programs to see such parental involvement first hand.

I would like to end by mentioning several resources which may be of help.

1. The Bureau of Education for the Handicapped First Chance Network. Contact Ms. Jane DeWeerd, Bureau of Education for the Handicapped, U.S. Office of Education, Washington, D.C. 20202. Ask for a list of the projects that are near you.

2. Special Education Resource Centers. Contact your State Education Agency for information about the location and services of such projects. These centers have much valuable information for parents and professionals.

3. The ERIC Collection. Many libraries have collections of the special education literature which is available for use by parents and professionals. Many college libraries also have these collections.

4. Special Education College Programs. Many such programs now exist. These departments with their staffs and students are a real resource to parents, but are often underutilized. Faculty can be invited to speak to parent groups.

5. Parent Organizations. There are many organizations that have been started by parents and many have professional and material resources.

6. Professional Organizations. Parents are welcomed to become members of such organizations -- for example, the Council for Exceptional Children. Publications and professional meetings are excellent means of staying abreast of the latest educational practices.

7. State Departments of Education. Personnel are available to aid the professional and parent with questions or problems related to the education of handicapped children.

8. The Bureau of Education for the Handicapped. This Bureau, as part of H.E.W., has funds for training personnel, as well as for research

and service related activities.

The resources and models exist. They are yours if you want them. We have entered a new era in special education where parents are being considered equal partners in the teaching/learning experiences of their children. Professionals are starting to acknowledge this fact more openly. It is obvious, however, that we still have a long way to go.

WAYS TO INVOLVE PARENTS IN THE EDUCATION OF THEIR SEVERELY/PROFOUNDLY HANDICAPPED CHILD

Part B: The Preschool Intervention Program

Ms. Jody Ray
Director
Preschool Intervention Program
West Hartford, Connecticut

In preparing my remarks to you today, I was struck by the title of this workshop. Parents are involved in the education of their severely/profoundly handicapped children. The conflicts seem to occur in "our ways" (the providers of service) vs. "their ways" (the parents). Let's consider the areas of conflict, and why they occur.

Most formalized educational systems begin for the child at the age of five. Fortunately, in some states the mandated age for educating handicapped children is lower, but does learning not take place from birth? Adequate medical services are sometimes available, but where do the parents go for advice in managing and teaching this child who has some rather unique learning patterns? When the child becomes of "educational" age, new stumbling blocks greet the parents. Inappropriate assessments, lack of appropriate educational placements, and failure to include the parents in the diagnostic and placement process are only a few of the problems. To be fair, I must admit that very often the problems arise from lack of resources rather than lack of concern and knowledge.

However, in trying to remediate the problems, most systems made a basic mistake. Instead of looking for new ways to deliver services, old ways were modified. More professionals were added to staffs, parent meetings and conferences were built into program schedules, new labels were invented for children who didn't fit into old ones, and new classes were opened for the new "problems". The result--irate, demanding parents, a patchwork of services, and special education budgetary problems.

In 1969, Dr. John P. Ora at George Peabody College in Nashville, Tennessee, responded to these problems by developing a program based on an innovative service delivery system. Initially funded by the Bureau of the Education for the Handicapped, the Regional Intervention Program (RIP) was organized around several premises--the importance of early intervention, parents were the primary change agents, and human services had to be cost-effective. RIP, in its seven years of existence, has been cited several times as an exemplary program, because it has functioned as a successful parent-implemented cost-effective program.

This model has spawned several replication efforts in Tennessee, one in Cleveland, Ohio, and the one I am connected with in Hartford, Connecticut. The Preschool Intervention Program (PIP), located at St. Joseph's College in West Hartford, and supported by Title VI funds,

has been in operation since March, 1976. If you'll notice, the program name does not indicate that any particular handicap is served, and in fact, that's true. Any family of a young child who indicates that they want help, whether it be concerned about developmental delay, behavioral problems, or a physical handicap, can enter the PIP system. The program exists not as a duplication of, but as a safety net under, other community services. No family seeking help for their child will discover that there is no service for their particular concern. This prevents families from being met with the old bureaucratic run-around. I'm sure you're familiar, for example, with the programs for deaf children who exclude children who are deaf, and retarded. Then the parents find that the programs for retarded do not have personnel to teach the deaf. Where does the family go? If the school system is responsible, very often the response is to provide that child with individual staff (very expensive), or to include him in another group, which often results in an unsatisfactory learning program.

The PIP model has solved that problem in two ways, by spending part of its budget on buying consultant time, and in establishing coordinated services with other agencies. Thus, PIP is presently serving families of thirty-three children, who have developmental problems, including cleft-palate, cerebral palsy, genetic syndromes, visually and hearing impaired, etc., and developmentally intact children with behavioral problems. Consultants presently include a speech therapist, occupational therapist, pediatrician and psychologist.

Let's look at this system in more detail. PIP serves families of children, birth to six years of age. The families are referred to the program from pediatricians, other service agencies, preschools, or through self-referrals. There is no waiting list. The message conveyed is "Your concern is now, let's get started now." When the parents call, an intake interview is scheduled immediately. The interview is conducted by a trained PIP mother, who asks questions and notes the problems and concerns on a simple checklist. The parents are shown the program, and talk to other parents involved. They are informed of the parent participation requirement, which stipulates that they come with their child each day, and after meeting their objectives with their own child, provide training to other parents for six months. They then make their decision on whether to join the program or not. If they decide not to, an effort is made to find another placement which will meet the family's needs.

Since the parents are required to come every day, they are encouraged to bring their other young children with them, and the siblings serve as models for our "mainstreamed" classrooms. Transportation is also provided, if needed. In other words, those problems which prevent parents from involvement are taken care of by PIP.

Parents and children come four mornings a week. The current staff includes three resource people and a secretary. The resource people are just that--resources to the parents. They provided training to

children and parents during start-up time, but their Special Education-Early Childhood backgrounds now provide the parents with programming and organizational information, as the parents provide the daily service to the new parents and children entering the program. Each resource person has responsibility for a training module, but all functions within that module are performed by trained parents. Thus, PIP is continually able to expand its service capability to more families.

Training is provided through three direct-service components of the program--Generalization Training, Individual Tutoring and the Pre-school Modules. Each family entering the program is assigned either to the Generalization Training Module, if the problem is behavioral management, or to Individual Tutoring if the problem is developmental--language, motor, or self-help skills. Daily training sessions are conducted with the parents and child in each of these modules. When the child is not in an individual training session, he attends the preschool module. Meanwhile, the parent is being trained in specific skills and functions. Initially, the mother learns to take data on other training sessions, and to teach groups of children in the classroom situation. A large percentage of the parents attending the program are mothers, because fathers are working, but both parents are invited to participate if they can. In all cases, the parent attending the program is asked to train the other parent at home in what he or she is learning in the program to provide consistency.

Family objectives are written for each family within six weeks of entering the program and are evaluated at regular intervals. Each family also works on home programs. In fact, the emphasis is on training and generalizing the new skills in the home setting.

In order to assure consumer satisfaction, the parents select parents to represent them on the five member Evaluation Committee. This committee meets regularly to monitor all facets of the program.

PIP also serves as a liaison for the child leaving it and entering the next appropriate setting. When objectives are met, and the child has the skills to function in a community setting, the child is assisted in that transition. The parents continue with the program until they have fulfilled their payback obligation.

Thus, PIP serves families of all young children, regardless of handicap or problem, with a data-based, management by objectives system. It is parents helping parents and themselves in gaining skills so that they can provide themselves and their children with the best possible environment in which to achieve their greatest potential. It is one answer to the human service delivery problems of limited money, inadequate services, and consumer dissatisfaction.

INTERAGENCY COOPERATION IN THE DELIVERY OF SERVICES TO SEVERELY AND PROFOUNDLY HANDICAPPED PEOPLE

Mr. Thomas F. Brown
Coordinator of P.L. 89-313 of Title I
State Department of Education
Trenton, New Jersey

A. OVERVIEW

New Jersey has mandated Special Education Legislation in the public schools since 1954. In 1954, a local school district was responsible for classified trainable or educable. If children were below the level of trainable, they were excluded from the operation of the public schools. The public school then had the responsibility to report such children to the county superintendent. The county superintendent, in turn, reported these children to the Department of Institutions and Agencies, a State Agency that operated as one of its subcomponents, the Division of Mental Retardation. In 1966, the legislation was changed, but these children were still reported to the Division of Mental Retardation. The normal procedure was for the child to be institutionalized or placed in a program operated by the New Jersey Association for Retarded Children. The Bureau of Day Trianing, a component of the Division of Mental Retardation, was established to provide an alternative to institutionalization. Children who were neither educable nor trainable then participated in an educational program operated by the Bureau of Day Training. The local public schools had no financial or transportation obligation for these children.

The New Jersey Education Act of 1974 indicated that all children were eligible for an educational program. A new term was devised entitled "Day Training Eligible". This meant that the local districts had a financial responsibility for the educational cost of children who were below the level of trainable. The local districts, many of whom were unaware that such children existed, were now faced with a financial obligation both for education and transportation costs. The enactment of this legislation followed a survey conducted by the State Department of Education into the 16 State operated Day Training facilities, listing the names and school districts of all children attending the Day Training Centers and the exact age of each child. This information was compiled and it was noted that there were approximately 800 such children throughout the State. The local districts were then informed by the Commissioner of Education that they would be responsible for a tuition fee of $5200 per child and a transportation fee of $2,000 per child per year. The agencies, that is, the Department of Institutions and Agencies and the State Department of Education, concurred that this was an appropriate way to finance the education of these children. However, the Attorney General indicated that this was an illegal expenditure of funds and that the State Government rather than the local educational agency would pay for the educational cost of these children. The program was then formalized to allow local districts to be aware of these children.

The children in the Day Training Centers are now being reviewed by local child study teams to ascertain whether an appropriate educational program can be offered in the local public school arena. If this is not possible, then it will become the responsibility of the Bureau of Day Training, Division of Mental Retardation, to supply the educational programs for such children. The final episode of this misunderstanding regarding financial responsibility has not been concluded between both Departments of State Government. It would appear that all such children would be provided an educational program and would become the responsibility of the Bureau of Day Training, Division of Mental Retardation, Department of Human Services of the State of New Jersey, thereby relieving the local board of education of the tuition and transportation costs pending any legislative action that would change this premise.

The Department of Education and the Bureau of Day Training are developing "in concert" an individualized educational program commensurate with a child's needs.

Mr. John Conover
Chief
Bureau of Day Training
Trenton, New Jersey

B. BUREAU OF DAY TRAINING

The Bureau of Day Training was organized in 1962 as a direct result of a request initiated by the New Jersey Association for Retarded Children for the extension of training services to the severely or profoundly retarded children who are living in the community and had been excluded from all educational services by virtue of being neither trainable or educable. The initial budget amount for this service was $25,000. This money provided limited service for approximately 19 children. At the present time, the Bureau of Day Training budget including Title I and Title XX exceeds $7,250,000 and includes approximately 1,400 children and adults. There are nearly $8,000,000 worth of physical plants in operation and $2,500,000 worth under construction or in the planning stage.

Legislation mandating thorough and efficient education was passed by the State in July of 1976. This law requires that there be no waiting list for services thus making it mandatory for the Bureau of Day Training to provide services commensurate with the individual needs for all Day Training eligible children. At the present time, there is a great deal of confusion over the source of the funds required for this program. It appears as though the resolution of this problem must await further interpretation of the recently passed legislation and in all probability amendments to this legislation will indicate:

1. A formula for funding the program and method of reimbursing this program.

2. A more defined statement on the source of funds for this program.

The Bureau offers the services of physical therapy, occupational therapy, and speech therapy to educational training programs. Nearly 60 percent of all children who enter this program are nonverbal, 40 percent are nonambulatory, and 45 percent are not toilet trained. It is not our purpose to totally eliminate the abnormalities which are exhibited by these children. It is our goal and objective to remediate the abnormalities to whatever degree possible. For example, the primary goal is not to correct poor speech but, in the majority of cases, to establish a means of communication by which the nonverbal child can communicate his or her basic needs. A child who cannot crawl may have as a primary goal learning to crawl. If the child learns to stand, and walk and communicate on even a primative level, verbal or with gestural language, we have come a long way. Remember we are talking about individuals who, until their admission into the program at age five or more, have not been accepted in the public schools, and who, for the very first time in their lives, are participating in an active well thought out program specifically designed to enhance their ability to live in the community and with the family.

With the coming of thorough and efficient legislation, the development of a new staffing pattern for the Day Care Center will basically upgrade the education of staff members. Let me hasten to state for the record that though the new staffing model will increase the educational level of the staff, I do not mean to imply by this that a Bachelors, Masters, or Doctoral degree will drastically affect the way in which staff members function with the children since much of the progress which we have seen in the children over the past 16 years comes as a result of a caring staff and since we all recognize educational accomplishments do not necessarily carry with it the development of empathy, understanding, or love.

The higher education facilities who in the future will be training personnel to staff programs for the severely or profoundly retarded will do well to take advantage of the experts already in such programs who have demonstrated an ability to care for and train severely or profoundly mentally retarded children. They must take advantage of the teaching tools and staff members who by virtue of years of experience may be able to contribute to their training programs in a degree which is not possible from those whose educational credentials are of a higher order. I am reminded of an incident which occurred to me several years ago teaching at the University of Georgia when I made a comment regarding the inaccuracy which I found in a text book. A young lady in the class raised her hand and said "But Mr. Conover, it must be right. It's printed in the book." If we are to rely on the printed word to the exclusion of the experience of the person who is down in the training room changing the dirty diapers and dealing on a one to one basis with the children, we

will indeed have run into a major impediment in the development of the program.

Let me tell you about a failure of ours from years back. A child who had been classified as profoundly retarded by a school district was admitted to one of our centers. In a period of only six months after admission to the Day Training Program, this child was able to learn to walk, talk, feed himself and for all intents and purposes, acted like a normal seven year old. He was then admitted to the public school -- not to a trainable nor an educable class, but to a normal Kindergarten class. For the next six years I followed this child and found that he was able to compete in regular classes. He was two years behind the other children in his class chronologically but not academically. Yes, this was a failure. It was a failure because we indeed realize that the child we saw who had been classified as severely and profoundly retarded was actually delayed in his development as a result of parental overprotection.

I must now say a couple of words about the "in concert" agreement between the Department of Education and the Department of Human Services which I represent. I cannot say that upon learning of the pending legislation on thorough and efficient education that I saw the Department of Education as a white-knight who was about to extract the fair maiden from the arms of the dragon, nor do I believe that the Department of Education view the Department of Human Services, Bureau of Day Training as being the epitome of all that is bad.

I must say, however, that the enactment of the legislation has led me to the position of new respect for the Department of Education and in particular, for the other members of the panel Tom Brown, Lenny Sains, Chuck Murray. My relationship with these three men over the past year and a half has given me new respect for the honesty, integrity, and intelligence of these men. I am convinced that our association will be as fruitful in the future as it has been during these past 18 months.

I cannot conclude without stating that the Day Training Program is not an inexpensive one. Indeed the program offered by the Bureau will cost $5,200 a year per child and the transportation an additional $2,000 (the program operates 240 days a year). In the long run the delay in institutionalization of these children is economically sound since the present cost of institutionalizing a person in New Jersey exceed $175,000 during his or her life time. For each year's delay in placing the child in an institution, the State is saving in excess of $2,000 and the family is benefiting in that they are not compelled because of lack of programming in the community to give up their child to an institution.

Mr. Leonard Sains
Area Coordinator
State Department of Education
Millburn, New Jersey

C. COOPERATION BETWEEN BUREAU OF DAY TRAINING AND BUREAU OF SPECIAL EDUCATION

The "in concert" provision of P.L. 1975, Chapter 212, Laws enacted by the New Jersey Legislature and signed by Governor Byrne, assigned the responsibility for educating severely/profoundly handicapped children to the New Jersey Department of Education, Bureau of Special Education. The statute also stipulated that the Department of Education was to act in concert with the Bureau of Day Training, New Jersey Department of Human Services, in the delivery of programs.

The new mandate concerning severely/profoundly handicapped children presented a unique problem for Special Education in New Jersey. Prior to the enactment of Chapter 212, the population under discussion was one which could ~~be~~ legally excluded by the public schools as being "neither educable nor trainable." Therefore the schools are now required to provide services to a population which, prior to 1975, was not even the responsibility of education. The situation mandated by law required unusual and immediate measures.

The solution to this complex problem of services to the severely/profoundly handicapped was incredibly simple. While exploring possible service delivery options, the first realization was that quality programs were already a reality. Programs provided by the Bureau of Day Training were fully implemented. There was no justifiable reason for the Department of Education to re-invent the wheel. The question then became not whether we should develop programs, but rather how could the Department of Education work cooperatively with the Bureau of Day Training to utilize the quality programs available. To do this, interagency procedures have to be jointly developed.

Meetings between the two state agencies were held to set forth proceedures for cooperative efforts in the identification, evaluation, classification and referral of severely/profoundly handicapped children. The most gratifying outcome of the joint efforts of the two agencies was the effectiveness of cooperation and the "in concert" concept when two separate state agencies are determined to serve children. The end result of the efforts of all concerned was that services can be provided jointly by two state agencies and all obstacles to that end can be overcome.

The procedures designed require:

1. School districts to identify all severely/profoundly handicapped children, assisted by:
    a. Bureau of Day Training

    b. Child Find
    c. Health Field Professionals
    d. Parents
    e. School Professionals

2. Local district child study teams, working jointly with the educational consultant of the respective day training center, evaluate each severely/profoundly handicapped child and construct the individualized educational plan, based on the sequential task analysis curriculum.

3. After classification, design of educational plan, and recommendation for program, the referral is submitted to the appropriate day training center.

4. Follow-up and re-evaluation are to be jointly undertaken by local district child study team and day training staff.

Dr. Charles Murray
State Resource Consultant
State Department of Education
Trenton, New Jersey

D. INSERVICE TRAINING

A vital component of any process developed to implement interagency cooperation is inservice training. In the development of the New Jersey Interagency cooperative model of service for the severely and profoundly mentally reatrded, the inservice component has three phases:

- A. Central staff inservice
- B. Regional and local inservice
- C. Local professional development inservice

Prior to any fully developed interagency plan, inservice had to be provided to the state level staffs of both the Department of Education and Department of Human Services (formerly Institutions and Agencies). This training was generally an information exchange dealing with the organizational structure of both Departments and specifically with the operation of the Bureau of Special Education and Pupil Personnel Services, Department of Education and the Bureau of Day Training, Department of Human Services. Following this informational inservice, a two day working session was established to deal with specific issues and concerns such as staffing, training, and funding. The following is the agenda for the two day session:

TWO DAY CONFERENCE - DAY TRAINING ELIGIBLE

Day One Activities

A general discussion of concerns and information exchange with institutions and Agencies and the Branch of Special Education and Pupil Personnel Services.

Information Base

- I. Identification of population
  - a. Check printouts
  - b. Day Training by district from center
  - c. Project Child Find
  - d. Bureau of Field Service
  - e. A.R.C.
  - f. Cerebral Palsy Centers
- II. Notification to district
  - a. Explain Law
  - b. Define "In Concert"
  - c. District Responsibility
  - d. Procedure for placement
    - 1. District notification
    - 2. Re-enrollment
    - 3. CST evaluation with Educational Specialist of Day Training (30 day evaluative placement of child in center as part of evaluative process.)
    - 4. Application submitted
    - 5. Approval
    - 6. Intake
    - 7. Placement
- III. Procedure
  - a. Identify child
  - b. Notify the school district
  - c. District contact the parent
  - d. Enroll the child
  - e. Bilingual approach forms in Spanish
  - f. Child Study Supervisor gets list
  - g. Child Study Supervisor sets schedules and time tables
  - h. Completion date set at January 1, 1977
- IV. Exclusion forms to be changes
  - Prior list to LEA
  - Prior list to Child Study Supervisors
  - Blanks to be left at LEA for walk-in's at offices

Day Two Activities

- I. Information Bulletins to be developed
  - a. Local School District
  - b. Parents

    c. County Child Study Superviso
    d. County Superintendent
    e. Central Office Staff
    f. Regional Teams
    g. Day Training Personnel

II. Materials and Information currently existing
    a. Department of Education
        1. Legislation and Administrative Codes
        2. P.L. 94-142
    b. Day Training
        1. Staffing Pattern
        2. General Curriculum Manual

III. Materials to be developed
    a. Organizational Chart
    b. Explanation of Chart
    c. General Curriculum Abstract
    d. Pre-Vocational Curriculum

IV. A. In-Service Training

    B. In Concert Operation

    C. Curriculum
        (Audience)
        1. Day Training Staff
        2. Local District Team and Administrators
        3. Branch of Special Education and Pupil Personnel Services; Bureau of Day Training

    D. Interdiciplary Approach
        Day Training Staff (Spring, 1977)

    E. Behavior Management
        Day Training Staff (Fall, 1977)

V. Time Line - Curriculum Development and Dissemination
    A. Final Draft; Curriculum - June 30, 1976

    B. Development of Final Curriculum Product
        1. Meeting with EIC - South Jersey - July 9, 1976
        2. Printing completed - July 23, 1976
        3. Distribution - July 30, 1976
        4. In-Service - beginning September, 1976

Meeting scheduled between Institutions and Agencies and Branch of Special Education and Pupil Personnel Services July 12, 1976.

The result of this two day session was an inter-agency plan. The plan was two fold. First the organization plan and second the operational plan.

The Organizational Plan

The organizational plan developed did not alter the Bureau of Special Education and Pupil Personnel Services, but did modify the organization of the Bureau of Day Training. The following is the present organizational structure of each Bureau.

PROFESSIONAL STAFFING ORGANIZATION

Bureau of Special Education and Pupil Personnel Services	Bureau of Day Training
Director	Director
4 Area Coordinators	4 Regional Directors
Coordinator of Training	Bookkeeper
Coordinator of Pupil Services	Personnel Officer
Coordinator of Special Education Title I	Staff Trainer Staff Training Aide
Department of Education	Supervising Social Worker
Personnel Office	5 Social Workers
Administration & Finance	28 Day Training Center Administrations
Local School District	28 Education Specialists
Superintendent	Teachers/Aids Support services for 28 centers.
Director of Special Education	
Chairman of Child Study Team	

The State Operated and Contracted centers would be organizationally designed as follows:

TABLE OF ORGANIZATION FOR DELIVERY OF EDUCATIONAL PROGRAMS

Day Training Unit-(Based on services for 45 children)

Administration

1 Coordinator
1 Secretary

Instruction

5 Special Education Certified teachers
5 Technicians
5 Aides
1 Education Specialist (Learning & Curriculum Consultant)
1 Physical Therapist
1 Occupational Therapist
1 Speech Therapist

Attendance and Health

1 Nurse

Operations

1 Janitor

Maintenance

1 Repairman

The operational plan included staffing patterns (as designed under the organizational plan); training requirements and curricular concerns were interlocking considerations. The training (inservice) plan included inservice to local Day Training Centers, Department of Human Services and regional Department of Education staff. This inservice was designed to train and inform staff regarding the new organization, curriculum and staffing patterns. In addition to this informational inservice, the training plan included a series of curriculum workshops, training in Department of Education statutes, rules and regulations for implementation of the organizational and operational plans. Through the Department of Education in cooperation with the Department of Human Services and the New Jersey colleges, the staff of Day Training centers will receive inservice for course credit leading toward special education certification for those classroom teachers who are currently not certified by the Department of Education.

In addition to the above instructional training, Day Training staff have selected specific topical areas for inservice such as behavior management, evaluation, etc. Inservice dealing with these topics will be provided by the Department of Education, through Department of Education staff and outside consultants.

APPENDIX A

REGION 9 CONFERENCE

EDUCATION OF SEVERELY AND PROFOUNDLY HANDICAPPED CHILDREN AND YOUTH

Sponsored by:

THE NORTHEAST REGIONAL RESOURCE CENTER

Sheraton Inn
South Portland, Maine
November 15, 16, and 17, 1977

CONFERENCE AGENDA

Time	Activity
MONDAY, NOVEMBER 15, 1976	
11:00 - 12:00 a.m.	Registration
12:00 - 1:30 p.m.	Buffet luncheon
1:30 - 2:00 p.m.	Opening Session Welcome and Opening Remarks -Mr. John Kierstead, Director of Special Education, Maine State Department -Mr. William Cashman, Director NERRC -Pegi Thorpe, NERRC -Rena Minisi, NERRC
2:00 - 4:00 p.m.	Keynote Address "Least Restrictive Alternative for Severely and Profoundly Handicapped - What Does It Really Mean!" -Dr. Lou Brown, University of Wisconsin
7:30 - 9:30 p.m.	Selected Films
7:30 - 9:00 p.m.	Informal Discussion with Consultants
"	Informal State Sharing
TUESDAY, NOVEMBER 16, 1976	
8:30 - 9:00 a.m.	Coffee and Danish

9:00 - 10:30	General Session "Overview of National Legislation and Its Implications" -Dr. William Halloran, B.E.H. Division of Assistance to States -Ms. Sandra Hazen, B.E.H. Division of Special Service Branch
10:30 - 10:45 a.m.	Coffee Break
10:45 - 12:00 a.m.	"An Overview of Exemplary Services" -~~Ms.~~ Sandra Hazen, B.E.H. Division of Special Services Branch -Mr. John Sinclair, New England Regional Center for Deaf/Blind Children -Dr. Robert York, American Association for the Education of Severely and Profoundly Handicapped
12:00 - 1:30 p.m.	Buffet Luncheon
2:00 - 5:00 p.m.	Small Group Workshops
7:30 - 9:30 p.m.	Selected Films
7:30 - 9:00 p.m.	Informal Discussion with Consultants
"	Informal State Sharing

WEDNESDAY, NOVEMBER 17, 1976

8:30 - 9:00 a.m.	Coffee and Danish
9:00 - 12:00 a.m.	Small Group Workshops
12:00 - 1:00 p.m.	Buffet Luncheon
2:00 - 2:30 p.m.	General Session
2:30 - 5:00 p.m.	State Planning Meetings
5:00 p.m.	Conference Adjourns

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LEARNING
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Connecticut · Maine · Massachusetts · New Hampshire · New Jersey · Rhode Island · Vermont

NERRC CONFERENCE ON EDUCATION OF SEVERELY & PROFOUNDLY HANDICAPPED PEOPLE

AGENDA
for Small Group Workshops

November 16-17, 1976

The Small Group Workshops will deal with the following areas. Specific titles, content and consultants are included so that participants may select and pre-register for small group workshops. In selecting workshops please be sure that your state is represented by at least one person from the state team. This will allow for maximal sharing of information within each state team.

TUESDAY, NOVEMBER 16, 1976 - 2:00 - 5:00 p.m.

1. Ongoing Assessment for Individualized Programming in the Classroom.

   Dr. Robert York, University of Vermont, Center for Special Education

   This workshop will discuss how the teacher or programmer assesses where the child is, what the child's needs are, and what his learning style is in order to develop and implement program goals and objectives. The interrelationship between assessment and programming will also be discussed.

2. Medical Assessment and Its Recommendations for Educational Programming.

   G. Robin Beck, M.D., University of Washington, School of Medicine

   This workshop is designed to give educators and other professionals an awareness of what should be included in a medical assessment, what can be done to relate this medical assessment to an educational program plan and what the medical personnel can tell parents and educators in reference to programming.

A New Jersey State Department of Education Program

3. Humanizing the Environment - People, Programs, and Places.

Ms. Elaine Ostroff, Massachusetts College of Art, Arts and Human
Services Specialization
Ms. Nancy Casey, Lower Pioneer Collaborative, Amherst, Massachusetts

The workshop will demonstrate the process of designing and building an environment based on individual needs and available resources. Various approaches will be demonstrated ranging from rather minor changes to the entire redesigning of a program area. Recycled materials and the team problem solving process will be some important aspects stressed in the workshop.

4. Methods of Service Delivery to Rural Populations.

C. Robert Campbell, Project MESH, Parsons, Kansas

This workshop will focus on some of the major considerations in the process of service delivery to rural populations such as funding, community resources, transportation and interagency cooperation. The range of potential in service delivery will be explored from working with parents at home to community based programs.

5. Methods and Techniques of Behavioral Programming.

A. Mr. Anthony Antosh and Ms. Joanne Stillings, Rhode Island College, Department of Special Education

"Behavioral Organization: Methods of Organizing and Conducting Total Programs for Severely Hanicapped Individuals."

This aspect of the workshop presented by Mr. Antosh and Ms. Stillings will focus on: 1) An overview of the behavioral process as it relates to program organization; 2) Behavioral Organizational Approaches: The Total Program; The Instructional Objective; 3) Adaptive Behavior: A guide to delineating program priorities; 4) Competency Based Teacher Training for Teachers of the Severely Handicapped: An Extension of the Behavioral Model.

B. Ms. Debby Peck, Miria Clark School, Hallowell, Maine

"A Creative Approach to Teaching Severely Handicapped Children."

This phase of the workshop presented by Ms. Peck will focus on: A creative approach to teaching severely handicapped children including specific objectives, evaluation, motivational techniques and legal forms. A short summary of the social and emotional problems encountered as a teacher when trying to provide quality education for the severely handicapped.

WEDNESDAY, NOVEMBER 17, 1976 - 9:00 a.m. - 12:00 Noon

6. Educational Assessment for Developing Individualized Educational Program.

   Mr. James McCormack and Mr. Brian Berkowitz, Massachusetts Center for Program Development and Evaluation
   Ms. Jeanne Kantianis, CERC-Education, Massachusetts

   This presentation will concentrate on describing various practical procedures for conducting appropriate educational and related assessments necessary to identify the specific objectives required for individualized educational plans.

7. Communication Methods for Nonverbal Children.

   Mr. William J. Keogh, Kansas Neurological Institute

   The workshop will review several intervention strategies that have been used to teach speech and language to severely handicapped children. Special emphasis will be placed on a step-by-step analysis of a training model that incorporates operant conditioning principles to assess and teach the prerequisites and requisites necessary for functional communication.

8. Development of Prevocational and Vocational Skills in Severely & Profoundly Handicapped People.

   Ms. Jinny O'Brien, Capital Region Educational Council; and
   Mr. Paul Anderson, New Hampshire State Department

   This workshop will define the terms and the implications of prevocational and vocational skill development. Examples of programs and projects which emphasize existing service delivery approaches will be discussed.

9. Ways to Involve Parents in the Education of their Severely and Profoundly Handicapped Child.

   Ms. Jody Ray, Preschool Intervention Program

   This portion of the workshop presented by Ms. Ray will focus on an overview of her program's activities with parents, unique aspects of the program such as parents training other parents and suggestions on how to expand services without increasing operational costs.

   Dr. George Olshin, Southern Connecticut College

   The portion of the workshop presented by Dr. Olshin will present an overview of parent related activities of the New Haven Preschool Program for Handicapped Children, discussion of parents day-to-day role in coping with the child, a discussion of a new parent program which teaches parents how to play with their child and discussion of a new parent organization.

10. Interagency Cooperation in the Delivery of Services to Severely and Profoundly Handicapped People.

Mr. Thomas Brown, Mr. Charles Murray and Mr. Leonard Sains,
Branch of Special Education and Pupil Personnel Services,
New Jersey State Department
Mr. John Conover, Division of Mental Retardation

This program includes involvement and participation in curriculum. development, inservice training, pupil assessment and individualized programs, and local education agency responsibilities for the described population. The agencies include all state and private agencies which may respond to these issues.

APPENDIX B

CONFERENCE EVALUATION

Region 9 Conference on the Education of
Severely and Profoundly Handicapped Children and Youth

South Portland, Maine
November 15, 16, and 17, 1976

I. PARTICIPANTS' REACTIONS TO INDIVIDUAL PRESENTATIONS

A. Keynote Address: Least Restrictive Alternative for Severely and Profoundly Handicapped - What Does It Really Mean? - Dr. Lou Brown

		(high)				(low)
		5	4	3	2	1
1.	Overall reaction to the session	28	12	10	1	0
2.	Prior knowledge of materials/ concepts	13	20	13	5	0
3.	Increased knowledge	7	17	12	5	10
4.	Overall usefulness of activity	20	7	15	6	3
5.	Clarity of goals/objectives	25	12	11	3	0
6.	Organization of activity	29	17	5	0	0
7.	Clarity of presentation	31	15	3	1	0
8.	Expertise of presenter	42	9	0	0	0
9.	Responsiveness of presenter	25	17	3	2	3

COMMENTS

1. Excellent presentation.
2. A highly useful concept that should be explored though not necessarily overall germain to the profoundly retarded.
3. More on institutions would have been helpful.
4. Dr. Brown's report was most helpful.
5. Not practical to our population; did not answer questions.

6. Interaction with group very poor; put down audience.

7. Should have followed one child through scale to see the realistic model and see if it really works and problems encountered.

8. Was very impressed that teaching the lowest of the low is more like than unlike teaching higher functioning kids.

9. Provocative, gives hope for deinstitutionalization working.

10. Addressed a totally different issue than severe/profound especially re: mentally retarded children.

11. Not only can he start some fires, but the content of what he says is more than valid - excellent!

12. Most of what was presented has yet to be applied to the LESS handicapped! Let's do it.

13. Did not answer questions - especially on contrasting issues.

14. There should be 50 like him to convey same information.

58 evaluation sheets

51 responded to this session

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8. "Overview of National Legislation and Its Implications" - Dr. William Halloran

		(high) 5	4	3	2	(low) 1
1.	Overall reaction to the session	12	17	13	7	1
2.	Prior knowledge of materials/ concepts	7	15	15	6	6
3.	Increased knowledge	9	15	16	4	6
4.	Overall usefulness of activity	15	12	14	6	2
5.	Clarity of goals/objectives	13	15	15	5	1
6.	Organization of activity	13	15	17	3	1
7.	Clarity of presentation	18	21	8	1	1
8.	Expertise of presenter	21	[illegible]	4	1	1

1. The consultant presented the information he had, however, there are too many unanswered questions that will have to be answered very shortly.

2. Concepts we all must know - a vital part of the meeting.

3. A bit disorganized, but informative.

4. A mundane presentation of material which is difficult to present at best.

5. Tried hard to present complex law as clearly as possible.

6. Honest when responding to questions.

7. Presentations redundant and superfulous to conference topic.

8. Can anybody really answer P.L. 94-142 questions to any great extent yet?

9. helped to clarify P.L. 94-142.

10. Topic requires more time for maximum usefulness to population.

11. Film was good, but too fast.

12. Would have liked to have more specific answers.

13. Felt it could have been covered with written material; would have liked more concrete examples.

14. Very needed.

15. Needed smaller question - answer sessions.

58 evaluation sheets

50 responded to this session

****

BEST COPY AVAILABLE

C. "An Overview of Exemplary Services" - Sandra Hazen, John Sinclair, Bob York

		(high) 5	4	3	2	(low) 1
1.	Overall reaction to the session	4	11	16	18	3
2.	Prior knowledge of materials/ concepts	1	11	23	10	7
3.	Increased knowledge	1	11	20	11	9
4.	Overall usefulness of activity	1	12	18	10	8
5.	Clarity of goals/objectives	2	14	23	9	4
6.	Organization of activity	1	18	19	12	2
7.	Clarity of presentation	4	20	18	5	5
8.	Expertise of presenter	7	12	20	6	4

COMMENTS

1. Could have eliminated this one; much contained in your literature which is quite extensive.
2. Felt Dr. York was good but would have liked to have seen him in role other than promotion man.
3. Should have been presented panel style; interaction would have enhanced interaction
4. Difficult to hear Sandy Hazen.
5. Sinclair - overall was above average.
6. AAESPH sounds like a good organization.
7. Not very helpful in terms of goals of conference.
8. Missed the point for this conference.
9. Not very useful information.
10. Insufficient time allowed for presenters.
11. York's program seems to demand too much paperwork for teachers to implement.

58 evaluation sheets
52 responded to session

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D. Workshop #1 - Ongoing Assessment for Individualized Programming in the Classroom - Bob York

	(high) 5	4	3	2	(low) 1
1. Overall reaction to the session	4	6	5	1	0
2. Prior knowledge of materials/ concepts	2	3	5	3	2
3. Increased knowledge	2	5	4	1	3
4. Overall usefulness of activity	5	7	2	1	0
5. Clarity of goals/objectives	7	5	3	0	0
6. Organization of activity	8	4	3	0	0
7. Clarity of presentation	9	4	2	0	0
8. Expertise of presenter	6	6	3	0	0

COMMENTS

1. Would have liked some materials given out.
2. This kind of a program is possible when money and good administration is available. The amount of weekly paper work done seemed too much. Free time must be provided to classroom teachers to prepare such reports and graphs.
3. It would be helpful to have samples of assessment graphs and forms.
4. Excellent!
5. Very specific treatment - would have been improved by a little more breadth.

16 evaluations

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1. Workshop #2 - Medical Assessment and Its Recommendations for Educational Programming - G. Robin Beck

	(high)				(low)
	5	4	3	2	1
1. Overall reaction to the session	0	4	4	1	0
2. Prior knowledge of materials/concepts	6	2	1	0	0
3. Increased knowledge	6	2	0	1	0
4. Overall usefulness of activity	6	1	1	1	0
5. Clarity of goals/objectives	6	1	1	1	0
6. Organization of activity	6	1	1	1	0
7. Clarity of presentation	6	3	0	0	0
8. Expertise of presenter	7	1	1	0	0

COMMENTS

1. Excellent
2. Outstanding speaker - enthusiastic as well as being extremely knowledgeable.
3. Different approach than usually seen with medical personnel. Average on organization but the little structure was effective because of the interest of people in attendance.
4. Too general; did not really deal with "medical issues", dealt with behavioral programming techniques.

9 evaluations

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F. Workshop #3 - Humanizing the Environment - People, Programs and Places - Elaine Ostroff, Nancy Casey

	(high) 5	4	3	2	(low) 1
1. Overall reaction to the session	0	6	5	3	0
2. Prior knowledge of materials/concepts	2	8	3	1	0
3. Increased knowledge	2	7	5	0	0
4. Overall usefulness of activity	2	10	2	0	0
5. Clarity of organization	4	5	5	0	0
6. Organization of activity	2	10	2	0	0
7. Clarity of presentation	9	5	0	0	0
8. Expertise of presenter	9	4	1	0	0

COMMENTS

1. Original idea bombed out - they expertly changed plans and brought more ideas and information to the audience - great session followed!
2. Good presentation - could have been more participant involvement to topic.
3. A most worthwhile experience but too long a "sit".
4. Lots of materials, animated presentations, involved participants.
5. Presenters were attentive to the group needs and presented a program with multi-handicapped people in a rational manner.
6. These consultants would be useful in an institutional setting, but on a much broader scale.

14 evaluations

* * *

G. Workshop #4 - Methods of Service Delivery to Rural Populations - C. Robert Campbell

		(high)				(low)
		5	4	3	2	1
1.	Overall reaction to the session	0	4	4	2	1
2.	Prior knowledge of materials/ concepts	0	1	4	4	2
3.	Increased knowledge	0	1	1	6	3
4.	Overall usefulness of activity	0	2	5	1	3
5.	Clarity of presentation	1	2	5	1	1
6.	Organization of activity	1	1	4	3	1
7.	Clarity of presentation	1	3	6	0	0
8.	Expertise of presenter	2	0	6	2	1

COMMENTS

1. Not very useful.

2. Was not tied closely enough to rural service delivery.

3. Title of workshop set expectations that presenter was not prepared to meet.

4. More about curriculum design than rural service delivery.

5. Didn't help with rural delivery, but it was an excellent program that I took much away for my use.

6. Program seems behind the times for New England area.

7. The MESH project has little in common with rural New England resources and situations.

11 evaluations

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H. Workshop #5 - Methods and Techniques of Behavioral Programming -

A. Behavioral Organization: Methods of Organizing and Conducting Total Programs for Severely Handicapped Individuals - Anthony Antosh, Joann Stillings

B. A Creative Approach to Teaching Severely Handicapped Children - Debby Peck

		(high)				(low)
		5	4	3	2	1
1.	Overall reaction to the session	1	5	2	0	1
2.	Prior knowledge of materials/ concepts	3	4	0	1	1
3.	Increased knowledge	5	2	1	0	1
4.	Overall usefulness of activity	8	1	0	0	0
5.	Clarity of presentation	7	2	0	0	0
6.	Organization of activity	6	3	0	0	0
7.	Clarity of presentation	1	3	6	0	0
8.	Expertise of presenter	6	3	0	0	0

COMMENTS

1. Debby Peck's presentation was especially good.
2. Having no knowledge of severe/profound to begin with, I found it, as a public employee, SUPER!
3. Very excellent session.
4. I found this workshop to be extremely useful to me as a teacher to organize and develop individual educational plans.
5. Appropriate to all levels of professionalism.

9 evaluations

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1. Workshop #6 - Educational Assessment for Developing Individualized Educational Program - James McCormack, Brian Berkowitz, and Jeanne Kantianis

		(high) 5	4	3	2	(low) 1
1.	Overall reaction to the session	0	4	6	0	0
2.	Prior knowledge of materials concepts	0	3	3	2	2
3.	Increased knowledge	1	1	5	1	2
4.	Overall usefulness of activity	1	5	4	0	0
5.	Clarity of presentation	2	5	2	1	0
6.	Organization of activity	1	4	3	1	0
7.	Clarity of presentation	3	4	2	1	0
8.	Expertise of presenter	1	5	4	0	0

COMMENTS

1. Too idealistic, not reality based for any place in New Hampshire.
2. Too theoretical.
3. Gave the impression that his program was only "right" one.
4. This is a reality that must be addressed and they did so very well.
5. Good presentation.

10 evaluations

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J. Workshop #7 - Communication Methods for Nonverbal Children - William Keogh

		(high) 5	4	3	2	(low) 1
1.	Overall reaction to the session	0	2	6	2	1
2.	Prior knowledge of materials/ concepts	4	6	1	0	0
3.	Increased knowledge	5	5	1	0	0
4.	Overall usefulness of activity	7	3	1	0	0
5.	Clarity of presentation	7	3	1	0	0
6.	Organization of activity	6	4	1	0	0
7.	Clarity of presentation	10	1	0	0	0
8.	Expertise of presenter	8	2	1	0	0

COMMENTS

1 Would have liked to see more forms of alternate communication systems.

2. Excellent.

3. Very helpful - I would like to initiate a similar program.

4. Very useful to direct service people.

5 A highly competent and knowledgeable presenter.

6 This workshop reinforced some of the things I am doing with kids and provided me with some concrete things to bring back to my staff and program.

7. Procedures were described in detail - very good handouts.

11 evaluations

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K. Workshop #8 - Development of Prevocational and Vocational Skills in Severely and Profoundly Handicapped People - Jinny O'Brien, Paul Anderson

		(high)				(low)
		5	4	3	2	1
1.	Overall reaction to the session	0	1	2	3	0
2.	Prior knowledge of materials/ concepts	1	2	0	1	2
3.	Increased knowledge	2	0	1	0	3
4.	Overall usefulness of activity	2	0	0	3	1
5.	Clarity of presentation	2	0	2	1	1
6.	Organization of activity	2	0	2	1	1
7.	Clarity of presentation	2	0	2	1	0
8.	Expertise of presenter	2	1	2	1	1

COMMENTS

1. Same old problem here - severe/profound mentally retarded people are left in the dark. They have the problem of "entry" no less "re-entry." They also need follow-up services beyond 60 days.

2. Mr. Anderson was not at all geared to the population in question.

3. Mr. Anderson's presentation was totally inappropriate to the needs of severely/profoundly retarded children.

4. Ms. O'Brien's presentation was excellent.

7 evaluations

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L. Workshop #9 - Ways to Involve Parents in the Education of their Severely and Profoundly Handicapped Child - Jody Ray, George Olshin

		(high)				(low)
		5	4	3	2	1
1.	Overall reaction to the session	5	2	3	3	1
2.	Prior knowledge of materials/concepts	2	7	2	2	1
3.	Increased knowledge	5	5	2	1	1
4.	Overall usefulness of activity	8	4	1	1	0
5.	Clarity of presentation	8	3	2	1	0
6.	Organization of activity	10	3	0	1	0
7.	Clarity of presentation	10	3	0	1	0
8.	Expertise of presenter	10	3	0	1	0

COMMENTS

1. Reinforced my own views of helping parents.
2. Presenters were involved, committed and real.
3. Ms. Ray's presentation was informative and had good materials.
4. Very good information.
5. Very relevant to working with parents; presentation stimulating.

14 evaluations

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M. Workshop #10 - Interagency Cooperation in the Delivery of Services to Severely and Profoundly Handicapped People - Thomas Brown, Chuck Murray, Leonard Sains, John Conover

		(high) 5	4	3	2	(low) 1
1.	Overall reaction to the session	0	3	5	2	0
2.	Prior knowledge of materials/ concepts	4	2	2	1	1
3.	Increased knowledge	4	2	3	1	0
4.	Overall usefulness of activity	3	5	1	1	0
5.	Clarity of presentation	3	5	0	1	1
6.	Organization of activity	6	2	1	0	1
7.	Clarity of presentation	6	1	2	1	0
8.	Expertise of presenter	7	2	1	0	0

COMMENTS

1. A state specific case study (fairly non-replicable). Did not really deal with process of interagency cooperation skills, etc.

2. A lot of interaction was better than speakers.

3. Received much insight into programs in other states - very beneficial to me.

4. This was the high point of the conference.

5. Most beneficial program of conference for direct application to Connecticut's situation.

6. Enjoyable - well related to topic.

10 evaluations

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II. PARTICIPANTS' REACTIONS TO THE ENTIRE CONFERENCE

The following statements are participants' comments.

1. Very nice conference. Lou Brown was typically dynamic. William Keogh was good. Informal meetings were good opportunities to exchange and share ideas. Met some good people. Some of the presenters were a bit off their stated topic.

2. I found it very useful in my role as teacher/coordinator. The sessions I attended were very well organized and pertinent to the needs of the deaf/blind population I am serving.

3. The workshops were the most valuable. More choice of workshops in lieu of films and general sessions should be considered.

4. I enjoyed meeting people in the field from similar organizations.

5. YES! Since we're talking severely handicapped children, it would be interesting listening to and discussing the interdisciplinary concept!

6. The organization has class. The two workshops I attended were great. The accommodations at the Sheraton were most comfortable. I don't know if I can ever go back to Massachusetts and attend one more "peanut butter" meeting after the show that RRC put on. The opportunity to meet so many interesting people, doing things in the field has been just great. This is one of the few conferences that I have attended that the participants were actually working with kids. It was so good to bitch about things with people who knew where you were coming from. If you do this again next year, I want to be invited!

7. Very well organized. Very well presented. Quite useful.

8. Very good - more groups - less workshops. Thanks.

9. Is it possible to get more people at the program implementation - planning level involved in leading and working with groups? I think it would be worthwhile. It was a nice conference.

10. The organization of the conference overall was very good. Worth repeating to others - Elaine Ostroff's presentation, Dr. Lou Brown's presentation, and Jinny O'Brien's presentation. Perhaps omit films at night - just too much to get to in one day.

11. Entire conference was of a high caliber and should prove useful. Provide participants with opportunity to visit programs in area of conference. At beginning of conference have each participant introduce herself/himself. Possibly have more general sessions. Cut time of workshops to permit repetition of workshop and thus permit participants to attend more presentations.

12. Keynote presentation was very stimulating and informative. Opportunities to interact with federal and state level personnel were needed and were appreciated. Small group workshops were not particularly helpful (in my case) but concept behind them was valid. Thank you for an informative, thought provoking three days!

13. Too many general sessions on things group already were aware of. Small group sessions were good. Could have facilitated discussion by avoiding such "formal" presentations there.

14. Several presenters were not talking about the severely and profoundly handicapped populations.

15. Appreciated the time for state planning.

16. Too broad and idealistic. In the future I would like to see less about model projects and more to reality based programs.

17. Getting to know state programs. More workshops - less large presentations. More time for state meetings.

18. The workshops I attended and noted were of value. They certainly brought specificity to the conference. Presenters were high quality! Tuesday A.M. (BEH presentation) would have been far more valuable as a panel presentation - minus film strip - weak choice for this audience.

19. Excellent in general. Need better definition of children we're dealing with.

20. Found it very valuable. Some small groups were stronger than others but overall good conference. Handouts were excellent - good packet! Keep up the good work!

21. Overall very well organized. Improvements: workshops rather than lectures, more emphasis on low functioning child rather than trainable.

22. I wish more people had been able to attend.

23. Workshops, main speaker, and informal discussions with consultants. Excellent organization of entire conference and agenda, speakers, presentations, etc.

24. Incorporation of more time for leisure. Speakers who could have more specifically addressed the topic of "severe and profound retarded kids" via more extensive media, experiential role player situations, etc.

25. The bringing together of people who share common goals and expertise - learned some good things - I felt I new more about some things than some people.

26. Programmatic techniques were very worthwhile. How others are handling problems of implementation.

27. Each presentation should have been repeated so that participants could have attended more workshops.

28. The large group presenters like Dr. Lou Brown, and Bill Halloran should have presented their materials in smaller workshops.

29. The evening chats should be replaced by structured workshops.

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III. NERRC REACTIONS AND COMMENTS

The NERRC envisioned the conference as a means of bringing together people primarily from the northeast region to share their experiences, concerns and ideas for improving services to handicapped children and youth. In addition, through workshop sessions given by practitioners in the field on topics related to appraisal and programming, some direct information about human and material resources was made available. From a review of the evaluations, informal discussions and follow-up activities initiated in several states as an outgrowth of the meeting. The NERRC concludes that the conference was a beneficial activity.

There was a range of participant reactions to the different sessions, but in general, participants found the conference to be timely and worthwhile. In some cases, the concepts presented were felt to be too idealistic and not relevant to the education of severely and profoundly handicapped children and youth. Then again it was noted that many of the ideas and practices presented were quite pertinent and useful.

The most beneficial aspects of the conference proved to be the sharing of information between consultants and participants as well as among participants in the informal sessions. The conference provided an opportunity for people to develop an awareness of alternative approaches to the delivery of services to severely and profoundly handicapped children.

Among the needs that were identified by those present was the need to more accurately define the population being called severely and profoundly handicapped. It appears that though the behaviors and functioning levels are admittedly varied in this group, more consistency in criteria for identifying this population would facilitate sharing information among those developing programs. The need for increased communication in the field, not only to share ideas about programs and practices but also to increase public understanding and acceptance of the concept of education for this population was frequently discussed at the conference.

An additional comment is warranted concerning the participants at the conference. The NERRC staff was impressed by the group's enthusiasm, interest and sincere dedication to the education of severely and profoundly handicapped children and youth. It was exciting for us to be a part of the process.

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Appendix C

REGION 9 CONFERENCE

EDUCATION OF SEVERELY AND PROFOUNDLY HANDICAPPED CHILDREN AND YOUTH

Sponsored by:

THE NORTHEAST REGIONAL RESOURCE CENTER

Sheraton Inn
South Portland, Maine
November 15, 16, and 17, 1976

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A New Jersey State Department of Education Program
in cooperation with the U.S. Office of Education, Bureau of Education for the Handicapped

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Appendix D

FILM LIST

for the

CONFERENCE ON THE EDUCATION OF SEVERELY AND PROFOUNDLY HANDICAPPED CHILDREN AND YOUTH

The following is an annotated list of films which were previewed by the Northeast Regional Resource Center staff in preparation for the Conference on the Education of Severely and Profoundly Handicapped Children and Youth. The films were selected because they related to the various areas of interest expressed by representatives from each state who were contacted by the Northeast Regional Resource Center in preparation for the Conference.

The "description" section is a brief review of the film distributors. The "comments" section is a critique of the films made by the NERRC staff who previewed each selection.

GENESIS

Length: 25 minutes
Type: 16 mm film/color
Cost: Purchase - $250.00 Rental - $25.00 per day

Source: Educational Division
Hallmark Films and Recordings Inc.
1511 East North Avenue
Baltimore, Maryland 21213

Description: This first film of the series teaches how to train basic self-help skills...dressing...eating...toileting. The film aims to train anyone who follows the step-by-step procedures carefully detailed on the film to teach the mentally retarded.

Comments: This film would be appropriate to use as a training film for students, parents or staff. The film depicts good basic teaching principles which are well presented in a clear, concise style. Good illustrations of behavior modification programming being implemented.

ASK JUST FOR LITTLE THINGS

Length: 20 minutes
Type: 16 mm film/color
Cost: Purchase - $250.00 Rental - $25.00 per day

Source: Educational Division
Hallmark Films and Recordings Inc.
1511 East North Avenue
Baltimore, Maryland 21213

ASK JUST FOR LITTLE THINGS - Continued

Description: This second film is a sequel to *Genesis*, and graduates from self-help skills to the skills of ambulation, personal hygiene and attending. The concept of life skills is shown as the prerequisite skills to independent functioning.

Comments: As with *Genesis*, this appears to be an appropriate film to use in pre- or in-service training. Again basic behavior modification is emphasized as a teaching technique.

I'LL PROMISE YOU A TOMORROW

Length: 20 minutes
Type: 16 mm film/color
Cost: Purchase - $250.00 Rental - $25.00 per day

Source: Educational Division
Hallmark Films and Recordings Inc.
1511 East North Avenue
Baltimore, Maryland 21213

Description: This final film is carefully designed to teach anyone the basic concepts necessary in preparing the child for a special education setting in the community. The viewer learns how to teach three additional necessary life skills: communication, direction following, and group participation.

Comments: As with the two previous Hallmark films, good teaching strategies are depicted. This film could also have wide usage with students, staff, parents, etc.

TRY ANOTHER WAY

Length: 27 minutes
Type: 16 mm film/color
Cost: Purchase - $275.00 Rental $50.00

Source: Film Productions of Indianapolis
128 East 36th Street
Indianapolis, Indiana 46205

Description: "Try Another Way" is the philosophy behind a series of training films to be completed by January, 1977, which will represent a totally self-contained training program for teaching complex assembly tasks to severely handicapped people, including all levels of retardation. The "try another way" method, developed by Dr. Marc Gold, Children's Research Center, University of Illinois, is essentially a

TRY ANOTHER WAY - Continued

non-verbal technique which, through manual feedback, positively reinforces the development of marketable skills. The procedure is introduced in this film.

Comments: This is an excellent film illustrating the use of task analysis to teach complex behaviors to severely and profoundly handicapped children. It is the first in a series of training films appropriate for staff, parents and students. The concepts are clearly and concisely presented with good illustrations.

WHAT IS C.P.?

Length: 34 minutes
Type: a) 1/2" EIAJ video tape or
b) 3/4" U-Matic video tape
Cost: a) Purchase - $69.00 Rental - $15.00 per week
b) Purchase - $77.00 Rental - $15.00 per week

Source: Media Services
CDMRC WJ-10
University of Washington
Seattle, Washington 98195

Description: Part I: The definition and terminology of the various types of cerebral palsy.

Part II: "Care of the C.P. Child". The situations faced by the family of a C.P. child.

Both parts I and II are on a single one-hour videotape.

Comments: This tape highlighted the different motor problems of cerebral palsy children. Identification and assessment techniques were discussed and demonstrated. The film does not discuss treatment techniques. However, this topic is covered in Part II of the series entitled Care of the C.P. Child.

SHARING IDEAS OF PARENT INVOLVEMENT IN PROGRAMS FOR ATYPICAL INFANTS

Length: 12 minutes
Type: slide/tape presentation
Cost: Unknown

Source: National Organized Collaborative Project
United Cerebral Palsy Association, Inc.
66 East 34th Street
New York, New York 10016

SHARING IDEAS OF PARENT INVOLVEMENT IN PROGRAMS FOR ATYPICAL INFANTS - Continued

Description: This presentation explores the various ways of involving parents in Atypical Infant Center programs. Centers throughout the United States shared their ideas and slides. The presentation was funded through U.C.P. Associations, Inc. Collaborative Infant Project for Fall 1976 release.

Comments: The slide presentation depicts a wide range of activities which involve the total family not just parents. This presentation might be especially appropriate to initiate ideas, activities, or discussion.

A LIGHT FOR DEBRA

Length: 30 minutes
Type: 16 mm film/color
Cost:

Source: Special Office for Materials Distribution
Indiana University
Audio Visual Center
Bloomington, Indiana 47401

Description: A view of the use of behavior modification through reinforcement as a tool to aid in concept, academic task and social development of the severely mentally retarded child. Filmed in cooperation with Parsons Research Center, Parsons, Kansas and Fernald State School, Massachusetts.

Comments: The film emphasizes the development of critical behaviors, as a key to normalization. Students potential is maximized. The scenes in this film give the viewer an indication of what is possible in a residential educational environment given a low student-teacher ratio.

OUT OF THE SHADOWS

Length: 17 minutes
Type: 16 mm film/color
Cost: Daily rental - $6.15 Weekly Rental - $9.45

Source: University of Kansas
Film Services
746 Massachusetts Street
Lawrence, Kansas 66044

OUT OF THE SHADOWS - Continued

Description: Produced by the University of Kansas Bureau of Child Research, in cooperation with the Parsons State Hospital and Training Center, this film demonstrates successful training techniques for the mentally retarded child in such areas as motor movement, eating, dressing, communication and language development, self-care, and toilet training. The film covers the progress made in an intensive reinforcement program in one year.

Comments: This is an awareness film depicting what might be done to humanize the institutional environment. Although the basic instructional principles are appropriate, there was a lot of training done with representational materials (e.g. pictures of objects rather than real objects). Student-staff ratio was low and many activities were done on a one-to-one basis.

EARLY AND CONTINUOUS INTERVENTION WITH DOWN'S SYNDROME CHILDREN

Length: 15 minutes
Type: slide/tape presentation
Cost: Purchase - $53.00 Rental - $15.00 per week

Source: Media Services
CDMRC WJ-10
University of Washington
Seattle, Washington 98195

Description: Depicts our program for Down's Syndrome Children from its beginning in 1971 to the present. We see the progress made by the children who were first enrolled in the program and the steady expansion of the program to include more children. The Down's Syndrome Program starts as many children as possible when they are tiny infants, and continues with them in a progression of stimulating and rewarding classes.

Comments: This was a most refreshing and informative film as it depicts the benefits of early intervention in maximizing the potential of children with Down's Syndrome. Actual teaching methods and curriculum ideas are well illustrated. Again student-teacher ratio was low enabling staff to give a great deal of attention and direct instruction to students.

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